

DOCUMENT RESUME

ED 225 549

IR 010 556

AUTHOR Coelho, George V., Ed.
TITLE Television as a Teacher. A Research Monograph.
INSTITUTION National Inst. of Mental Health (DHHS), Bethesda, Md.
PUB DATE 81
NOTE 278p.
AVAILABLE FROM Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (1981-341-166/6376).
PUB TYPE Collected Works - General (020) -- Information Analyses (070) -- Viewpoints (120)
EDRS PRICE MF01/PC12 Plus Postage.
DESCRIPTORS *Child Development; *Educational Television; Evaluation; Institutionalized Persons; Interpersonal Relationship; Literature Reviews; *Mass Media Effects; *Mental Health; Sex Role; Social Values; Television Commercials; *Television Research; *Television Viewing

ABSTRACT

In this collection of papers, 10 social researchers and mental health specialists review and assess the state of the art in relevant areas of their expertise to provide an up-to-date and comprehensive account of the role of television as a teacher. An overview of issues, findings, and recommendations by Elizabeth J. Roberts is followed by nine papers on more specific topics: (1) "The Properties of Television and Its Effects on Children," by Alberta E. Siegel; (2) "Interpersonal Factors Mediating Viewing and Effects," by Aimee Dorr; (3) "Processes Involved in Children's Learning from Television: A Review of Research," by Tannis MacBeth Williams; (4) "Television and Social Values," by George Comstock; (5) "The Effects of Television on Institutionalized Children," by Eli A. Rubinstein; (6) "Television Drama and Commercials: A Report on Content and Context with Emphasis on Women and Girls," by Muriel G. Cantor; (7) "The Educational Use of Production Variables and Formative Research in Programing," by Keith W. Mielke; (8) "The Impact of Educational Television upon Young Children Around the World," by Wayne H. Holtzman; and (9) "Public Influence and Television Programing," by Richard I. Feinbloom. References are listed for each paper and a list of national media reform groups is attached. (LMM)

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TELEVISION AS A TEACHER:
A Research Monograph

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This monograph was written under contract numbers PLD's 28441-78, 8604-77, 8605-77, 0837-78, 8603-77, 0834-78, 9275-77, 8602-77, 8607-77, 8606-77 from the National Institute of Mental Health. The opinions expressed herein are the views of the authors and do not necessarily reflect the official position of the National Institute of Mental Health or the Department of Health and Human Services. Dr. Coelho served as the NIMH Project Officer.

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Printed 1981

FOREWORD

Since the Surgeon General's Scientific Advisory Committee on Television and Social Behavior presented its report in 1972, Television and Growing Up: The Impact of Televised Violence, professional and public attention has been increasingly focused on the role of television as a teacher and new family member in the American home.

Of special concern to educators, researchers, and practitioners in child mental health and development are the recommendations made in that report which emphasized the need for new knowledge concerning the developmental, contextual, and societal aspects of television's impact on the minds and behavior of young children.

In the following studies of recent findings and issues, 10 leading social researchers and mental health specialists address some broad and long-term developmental issues relating to television and children. Their scholarly review and assessment of the state of the art in relevant areas of their expertise provide an up-to-date and comprehensive account of the role of television as a teacher. Their reports and recommendations should interest parents, teachers, students, researchers, and professionals in child development, mental health, and educational practice, as well as communication and media arts specialists and producers of television programs for children.

This research monograph represents a timely and important contribution to our cumulative knowledge of the complex variety of influences of television on human behavior and development in the earliest years. It emphasizes the unique opportunity and challenges to concerned citizens and specialists for developing positive educational uses of television.

Herbert Pardes, M.D., Director
National Institute of Mental Health

INTRODUCTION

This volume was planned and organized as a result of numerous discussions by NIMH professional staff represented in the Child and Youth Advisory Group, NIMH, during 1977, who reviewed a wide range of issues concerning the role of television in child mental health research, practice, and education. It comprises nine special reports and an overview article which were commissioned by the Office of the Assistant Director for Children and Youth, NIMH, to represent major scholarly contributions to our understanding of the role of television as a teacher in the lives of children.

The experts were selected to address the following questions:

- (1) What are the history and the role of television as a major socialization agent in the United States? What are the functionally significant and distinctive features of television among the mass media of communication that children are exposed to and impressed by? (Siegel, chapter 2).
- (2) What is the nature of the interpersonal environments that mediate and mitigate the effects of learning from television? What difference, for instance, does it make if television is watched alone or in the company of parents, peers, siblings, classmates, or teachers? Does discussion of the television program in school, in the home, or among friends heighten the learning experience or does it serve to defuse the impact of the television program per se? Do these interpersonal environments affect the child's learning differently if what is learned is "knowledge or cognitive skills," "values and attitudes," "social behavior or skills?" (Dorr, chapter 3).
- (3) What are the mediating intellectual processes related to learning from television? How does the child select, assimilate, attend to, and store information from television programming during different stages of cognitive and social development? What is the relationship between general IQ and other scholastic achievement measures and learning from television? In what ways and spheres does television either accelerate or retard cognitive, emotional, and creative development? At what ages is television a more or less powerful teacher? (Williams, chapter 4).

- (4) What is the impact of television on the child's learning of specific social values, attitudes, and behavior, particularly as they relate to information about appropriate gender traits, pro-social behavior, family lifestyles, social roles? (Comstock, chapter 5).
- (5) What are the effects of institutionalized settings on the television viewing and learning process of children with special needs who are not institutionalized: for example, handicapped children, dyslexic children, etc.? (Rubinstein, chapter 6).
- (6) What does television teach young children about being a consumer in our society? What are the context and content of television messages delivered to women and girls especially? (Cantor, chapter 7).
- (7) What is the role of production factors and formative research in programing for children? What constructive educational uses have been developed in various content areas through the television medium? What specific attributes of program formats and production techniques have been used for quality television programing, such as is being produced by the Children's Television Workshop, including Sesame Street? (Mielke, chapter 8).
- (8) What is the impact of educational television upon young children around the world? What international developments in the use of educational television highlight constructive uses of television in various parts of the world? What do cross-cultural evaluations of the impact of educational television suggest about opportunities and obstacles for collaboration in international research? (Holtzman, chapter 9).
- (9) What has been the impact of professional and advocacy citizen groups in pointing out public policy issues of concern to the child mental health community? What are the implications for educating health professionals, parents, teachers, and children regarding the use of television? (Feinbloom, chapter 10).

These are some of the questions that are addressed by the contributors to this research monograph. It is expected that their findings, analyses, and syntheses will stimulate researchers and educators in child development and early child education to use the diverse and rich resources of television programs for the benefit of child mental health.

The National Institute of Mental Health acknowledges a special debt of gratitude to the authors for their scholarly contributions.

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Chapter 1. AN OVERVIEW OF ISSUES, FINDINGS, AND RECOMMENDATIONS

Elizabeth J. Roberts

INTRODUCTION

The school classroom is only one of many environments in which a child learns. Overheard conversations, games, books, stories, movies, comic books, observations of parents, friends, and even strangers in public places all inform children about the world around them. Of growing interest and concern is the way in which television educates our young people. In the few decades since television made its appearance, it has grown beyond the wildest of early expectations to become a predominant presence in our daily lives. With research indicating that by the time a child graduates from high school he or she will have spent more time in front of the television set than in a school classroom, it is with good reason this volume is titled Television as a Teacher.

The first part of this chapter provides a synthesis of the major findings and describes the two parts of the Television as a Teacher system: the pupil (child) and the teacher (television):

- . The Pupil. We will examine children's television viewing patterns and how television influences social learning and the development of cognitive skills and social values. Parents' potential role in influencing both television viewing patterns and the effects of such viewing will also be discussed.
- . The Teacher. We will outline the distinguishing features of American commercial broadcasting and how that system differs from that of public broadcasting. Limitations in our understanding of television content will be discussed as will the influence of consumer and media reform groups on the television curriculum.

This synthesis of the major findings presented in the nine chapters gives particular attention to (a) those findings that are supported by more than one study or that have been discussed in several of the chapters; (b) those findings that are unusually interesting and suggest direction for further research; and (c) findings that are particularly relevant to policy planning.

The second part of this chapter is devoted to recommendations and is divided into:

- . Recommended Research Guidelines
- . Recommended Topic Areas for Future Research
- . Recommendations for Action and Followup

SYNTHESIS OF CHAPTERS

Despite the considerable attention researchers have given to educational programs designed for children, such as Sesame Street or Mister Rogers' Neighborhood, most of the television that children watch is intended for older viewers. "As television viewers, young children are essentially intruders, outsiders, and unexpected guests. They are voyeurs of a scene intended for other eyes, eavesdroppers on words meant for other ears" (Siegel, chapter 2).

Most television is designed primarily for individuals who are presumably sophisticated in the ways of the world, cognizant of differences between reality and fantasy, and aware of the purposes of advertising. For the older viewer, what is seen on television can be balanced against what has been learned from reading, school, and personal experiences. However, for young viewers, the content of television is often extremely different from anything else in their life experiences. The young child does not have countervailing sources of information by which to compare and evaluate television messages, and his/her developing intelligence and social skills may not be able to assess and evaluate adequately what is seen on television. Thus, for the child, television presents a potentially powerful educational curriculum precisely because the child cannot go to books or newspapers for other perspectives on the world (Siegel, chapter 2).

Analyzing this unique and powerful relationship between television and children becomes more complex when we realize that the child, particularly the younger child, does not and cannot distinguish between television programs designed with specific educational goals and programs designed to entertain or to sell. It is important to remember that distinctions made between the types of content (i.e., entertainment or educational) are adult distinctions. For the child, these distinctions and definitions

are basically unimportant. In fact, the majority of evidence regarding television as a teacher arises not from studies of instructional programing for children but rather from studies assessing the impact of programing billed as "entertainment" and designed for adults. Thus, despite distinctions made by social scientists, communications researchers, members of the broadcast industry, or Federal funding agencies, for the child, the ultimate goals of the program are relatively unimportant.

Therefore, while Federal agencies discuss the impact of closed circuit instructional television, researchers speak of the impact of educational programing and broadcast executives maintain they are delivering entertainment or advertising in the open marketplace. Most research and, indeed, commonsense suggest that it is more realistic to think of all television as a schoolhouse beaming educational messages over the airwaves to eager pupils. For the child, all television is potentially educational.

In addition, the research reviewed here overwhelmingly suggests that the television "curriculum" does have a significant impact on children's lives. Many of the chapters prepared for this study contain substantial reviews of the data gathered from various domestic and international studies; it is hoped that their conclusions can finally put to rest the great debate on whether or not television has an impact. Building on Bandura's early studies in the 1960's, all papers supplied evidence of a positive association in real life between an exposure to a class of media content and the development by young people of attitudes and behavior. Taken together, the correlational and experimental studies reviewed make a powerful case for the influence of television on children (Comstock, chapter 5). Therefore, for future policy and research planning, the issue should no longer be whether or not television has an effect, but rather, what content and context variables influence learning, and what is the specific nature of the effect?

THE PUPIL

Children's Viewing Patterns

Children's viewing patterns are of concern to us both in terms of how much they watch and what they watch. How much they watch may be related to how well they do in school or in social interactions, in sports, or in hobbies, simply by virtue of the fact that the time given to television viewing is often time taken away from the development of the skills required for these other activities. What children watch relates to the kinds of information, attitudes, and behaviors they learn and perhaps perform, by virtue of what they actually see when viewing (Dorr, chapter 3).

Considerable research has documented that children spend enormous amounts of time watching television. A composite of viewing estimates from a number of studies indicates that children begin viewing television at a very early age and that there is a gradual increase in daily hours of viewing from about age 2 to the level of 2 hours a day at age 4, followed by a slight dip at age 6 (school takes time away from the set), an increase to more than 3 hours a day at age 9 and further increases to almost 4 hours per day by age 12. These rates decline somewhat during high school to slightly over 3 hours per day at age 20. These, of course, are means, and there are wide individual differences in viewing habits. In fact, the dropoff in television viewing during adolescence is often cited as a reason for focusing concern only on early childhood viewing. However, while there is some decline in adolescent television viewing, substantial viewing continues, and television remains a dominant medium in the lives of adolescents (Comstock, chapter 5; Williams, chapter 4). One study indicates that the average high school student, by the time he/she has graduated, has spent 11,000 hours in classrooms and 15,000 hours watching television.

Children begin to express program preferences almost as soon as they begin to view television. Preschoolers prefer cartoons, situation comedies, and children's programs. Beginning at about age 6 or 7, situation comedies become their favorites and remain so until pre-adolescence. By the end of elementary school, action adventures, musicals, variety and dramatic programs are on the preference list. News viewing begins in early adolescence and increases throughout high school, but it is never dominant (Williams, chapter 4). While we know far too little about gender differences in children's viewing patterns, some studies indicate that males prefer action programs and females prefer comedy programs. Viewing preferences are, of course, contingent upon program availability, with the recent shift away from action adventure programs and toward situation comedies possibly altering the pattern.

It is also important to note that the choice of programs watched is frequently influenced by the child's program preferences, placing programing choices within the domain of the child rather than the parent. When the child and parent disagree about program choice, the child's preference prevails as often as the adult's, and when two parents disagree about which program to watch, the child's preference will be decisive.

The impression one gets from these viewing patterns is that they have great potential influence, that there is considerable independence on the part of the child in selecting a "television curriculum," and that some degree of aesthetic imperialism exists on the part of the young viewer in influencing the entire family's viewing patterns (Comstock, chapter 5).

However staggering the figures on children's viewing patterns may be, the importance of television probably transcends the actual time spent viewing. Accumulating evidence cited throughout the research literature clearly establishes the fact that children learn by observing television and show evidence of their learning in a variety of ways including behavior imitation, development of social attitudes, and retention of information. Therefore, in terms of scope of influence, television should be considered a major socializing agent in the lives of children.

Television Viewing and Social Learning

Social learning encompasses the acquiring of information, attitudes, values, and norm expectancies, as well as the learning of skills, appropriate role behaviors, and appropriate emotional states. While it is useful to distinguish acquisition of behavior (including attention, selection, comprehension, and retention) from performance, in practice this is problematic since studies have focused on the effects of television on children's performance. Furthermore, the distinction traditionally made between learning and performance in the child development literature becomes considerably more confused when assessing the research data on television and child development (Dorr, chapter 3). It seems that the distinction is usually made in the type of study undertaken. Two issues operate at the same time. First, studies of television programing aimed at fostering cognitive growth are usually classed as "studies of learning," while most studies of entertainment programing (having no intended educational component) are often called "studies of performance."

Another distinction emerges between studies which try to identify changes in knowledge, attitudes, and values (learning studies) and those which have at their core changes in actions and observable behaviors (performance studies).

A group of children who have watched a particular educational program and have learned the alphabet with more speed than another group of children who have not watched that program would most likely have participated in a "learning study." At the same time, however, a group of heavy television viewers who report (incorrectly in this case) that a greater number of men and women in the United States work in law-enforcement and police-related occupations than in department stores as salespeople, would have participated in a "learning study" too. On the other hand, children who are observed to be more cooperative after viewing one kind of program or more aggressive after watching another kind of program, or children who tie their shoes or build a kite with greater ease after watching a specific program, would most likely have participated in a "performance study."

In many cases, the lines are blurred and the division is a confusing one. On the whole, I have referred to both types of studies as evidence of a child's learning from television. The following general principles are summaries of research on a child's ability to learn from television:

- (1) Learning (including retention, attention, comprehension, and ability to translate what has been learned into behavior) varies with age. While older children retain more relevant information, including social information observed from television, even the very young viewers demonstrate an ability to retain television's information, particularly if they like what they are viewing (Williams, chapter 4). Even though most research concludes that very young children are unable to comprehend the subtle intricacies of motives and consequences surrounding much behavior that appears on their television sets, given the right conditions, even the very young child has a capacity for understanding causality on television. However, most indications are that children of all ages do learn from television.
- (2) Television portrayals may influence behavior both through the acquisition of new responses and through altering the likelihood of the performance of previously acquired responses. Such alteration may occur through changing expectations regarding the outcomes of behavior, through identification with the perpetrator of an act, by raising or lowering inhibition, by changing the elicitory potential or environmental cues, and by assessing certain measures to a class of behaviors (Comstock, chapter 5). However, acquired resources may not manifest themselves behaviorally until eliciting conditions are present, and this may be some time after observation and acquisition have taken place. Perceived alternatives to the behavior are important in influencing whether or when certain behavior will be performed, and perceived alternatives increase with age.

- (3) Television most effectively influences social learning when it reinforces attitudes and expectations derived through direct experience. Similarly, messages which relate to the specific needs of the individual will make more of an impact than those messages which are remote. Thus, children will be more likely to model the behaviors of characters with whom they can readily identify, especially if the portrayal seems "true to life."
- (4) On the other hand, research also indicates television makes a greater impact on attitudes or behaviors that are less well formed. Television will also most effectively influence social learning when it defines situations about which information from other sources is not available. For example, working class children, compared to middle class children, blacks compared to whites, the less educated compared to the more educated in any given age group tend to view more television. These groups of children are also more likely to imitate the characters they see and to be less critical of what is offered. For them, television provides a means of seeing what goes on in a world about which they would otherwise have little information. On the other hand, when television messages conflict with information derived from direct experience or important interpersonal sources, the impact of television may be substantially, but not totally, reduced.
- (5) The impact of television is greater the more it is used and valued. Learning occurs more readily when models are observed more frequently, when the model is seen as having high prestige, and when the model's behavior is justified, effective, and/or rewarded.
- (6) Learning occurs more often when the information conveyed is consistent. Effects rarely depend on an individual program, although this may occasionally occur because of a specific program's excellence, because of a particularly moving incident, or because of the close fit between the program theme and an individual need. However, for the most part, effects occur as a result of messages communicated by many programs (Himmelweit and Bell, 1980).

In summary, the more the child voluntarily chooses to use a medium, the more the medium is enjoyed, the more it provides information in a manner which involves the viewer, the more it provides a consistent set of messages, the more such messages lead to reward (are positively reinforced), the more likely it is that such messages will exert an important influence.

These points are supported by a substantial body of studies, primarily studies of the relationship between viewing televised violence and acting in an aggressive manner. However, a number of the chapters in this book argue strongly that the same process underlies all learning from television.

Television Viewing and Cognitive Development

Relatively few studies have provided information about the relation between children's learning from television and various aspects of cognitive functioning. In part, this may be because the whole issue of measuring cognitive functioning is "very thorny" (Williams, chapter 4). In particular, there is controversy about whether such measurements reflect ability or achievement. However, several studies have examined the relation between children's viewing patterns and IQ scores. The studies show that the amount of television watched bears little relation to intelligence or school achievement. Where relationships do appear, heavy viewing is associated with low intelligence or poor achievement. Other studies suggest that the relationship changes with the age of the child. For example, in studies with younger children, IQs were the highest among the heaviest viewers; among adolescents, those with lower IQ scores were more likely to be the heavy viewers. However, still other studies have found that many of the brightest students at various grade levels were among the heaviest viewers (Williams, chapter 4).

It seems obvious that data are inconclusive regarding relationships between measurement of cognitive function and learning from television. Even the frequently cited parental fear that television viewing will reduce reading ability seems unsupported by the existing research. Though mixed, the data generally suggest that television viewing does not automatically result in poor reading ability, nor does it automatically increase reading ability.

Television Viewing and Social and Emotional Development

Some evidence suggests that heavy television viewing is related to poor social functioning. Although a typical motive for viewing television is entertainment or diversion, extraordinary involvement with television (or any other medium) may be a symptom of unsatisfactory relationships with peers or parents, or of psychological discomfort. Several of these chapters hypothesize that children who do not get along well with their peers watch more television because it is a more rewarding activity, or that children who watch more television will not get along well with their peers because they know less about how to interact with them (Dorr, chapter 3; Comstock, chapter 5). There are no data that suggest which causal pattern is more likely. However, it is clear that children and adults who watch significant amounts of television do sacrifice some informal time with peers. Accumulated over long periods of time or occurring prior to the development of good social skills, this might lead to decreased ability to function well in social situations (Dorr, chapter 3).

Studies of children's use of time provide supportive evidence for the proposition that the more television is viewed the fewer and less harmonious peer interactions the child has. Other research suggests that younger children may indeed watch more television in families where relationships are difficult because it provides an escape from these problems. These studies suggest that most children would ultimately function better with their peers if they watched less television and would perhaps cope better with difficult home situations if they did not escape into television viewing. Generally, across various age groups, television viewing is associated with some loss of time for informal play activities with peers and, therefore, some loss in the development of social skills. These conclusions are also supported by international studies (Holtzman, chapter 9).

Television Viewing and Development of Social Values

Several studies indicate that a person's image of reality is affected by television. This research suggests that television, almost imperceptibly, brings about changes in the child's outlook and values even though this is not the intent of the programs. It is the similarity of views and values conveyed on television that make their cumulative impact. There is a growing body of evidence suggesting that television may not only reflect the norms and values of society but may indeed serve to maintain these norms and values through its impact on the child. "Television, whether or not it accurately reflects our social system, does contribute to forming this social system. At the very least, it helps to socialize a new generation of children into an already existing pattern. To the extent that television does not reflect reality, it socializes children into a fictitious social system" (Dorr, 1974).

Parental Influence on Television Viewing and Learning

Associated with the importance of television in the lives of American children are the other factors that interact with television as it influences young people. Research and common sense tell us that there is no single influence that determines what one believes or what one does. Therefore, it is logical within this framework, to explore the ways in which television experiences interact with other experiences.

Over the years there have been several studies that examine the ways in which, and the extent to which, parents interact with their children's television viewing. These studies conclude that parents can be effective in several ways: by controlling the amount of time a child watches television; by influencing content choices; and by mediating learning and the performance of behavior learned from television.

While parents are likely to report that they have more control of their children's television viewing than their children are likely to report, parents themselves do not report especially high levels of control, and, unfortunately, most parents do not seem to know how to go about controlling their children's viewing patterns. They do not think about where the television set is placed, attractive alternatives to television viewing, or the range and variety of rules that are possible (Dorr, chapter 3). Television is such an integral part of the American family that children's interactions with it seem beyond the realm of parental thought or conscious control.

In most families, children generally control both the amount of viewing time and the content. This pattern seems to be true for preschoolers, young school children, and adolescents. Although research data suggest that parents can influence their children's viewing patterns by example, this influence is small and probably decreases as children mature. Other viewing partners (siblings, peers, teachers) also will have some influence on program choices, but the research is insufficient to indicate how much this occurs for children of different ages, ethnic backgrounds, and social classes. In general, studies indicate that parental control of viewing patterns is probably not very extensive.

Studies also indicate that preschool and elementary school children will learn more from television viewing if an adult takes an active role by drawing attention to important content, defining terms, and elaborating on concepts while the child is watching a program. Other studies have found that students learn more from television when their teachers provide opportunities for post-viewing discussion of content, especially when feedback is also given. Still others maintain that merely encouraging a child to watch, or engaging the child in activities relevant to program content before or after watching, also results in greater learning for the young child (Dorr, chapter 3). Thus the studies reviewed suggest that learning from television may be enhanced by directing attention to and supplementing educational statements and by encouraging activities which build upon television content. They also suggest that this may be done by a parent, a teacher, or an unfamiliar adult who may or may not be physically present, and with either instructional or entertainment programming (Dorr, chapter 3). While less data are available on older children, what is known suggests that parents and other adults can be effective in influencing both children's and adolescent's learning from television.

There are three ways in which adults can help children learn from viewing television, if that is the desired goal. First, adults can direct evaluative comments about what the children are watching or have watched, or they can directly elaborate on the content after viewing. Second, they can provide children with their own attitudes and with reasoning skills to help children mediate content effects themselves. Third, adults can help by providing environments which encourage or discourage reenactment of what has been seen. While all three methods have received attention in the literature, as one moves from the first to the third alternative, less is known. There are, however, indications that current research efforts may somewhat equalize this imbalance (Dorr, chapter 3).

It is clear from the data reviewed in the research papers that other people do not often, if ever, totally influence television viewing: neither the amount of viewing, nor the particular content, nor the effects (or noneffects) of viewing. To some extent, how much television children watch is influenced and determined by how much their parents watch and by the parents' rules; and what they watch is mostly controlled by the menu that television makes available to them. Children learn from television, but parents and other adults can mediate or enhance what is learned. Children's attitudes and behaviors are influenced by television, but the values, comments, and teaching of parents and other adults can moderate what the child accepts.

Only minimal information is available at this time regarding the relative importance of television, parents, peers, and teachers in a child's learning. It seems that television programs are a greater source of information about topics with which the child does not have much personal experience. Other analyses conducted to determine the relative impact of parents, peers, and television on children's attitudes and beliefs seem to indicate more congruence between children's attitudes and those they believe their parents or peers hold than between children's attitudes and those presented on or perceived to be on television. Television, thus, seems to fill a void when parents and other significant people permit it to do so (Dorr, chapter 3).

Summary

Children watch a lot of television. They learn information, attitudes, values, expectations, and skills. Although television's influence varies with the age of the child, all children learn from television. And there are certain conditions that increase the likelihood that children will learn from what they watch: For example, if they like what they watch, if it feels "close to home" to them, if it gives them information about which they have no other experiences or resources to give them other information, or if it reinforces their own personal learning.

Research on the relation between television viewing and cognitive development is inconclusive, and no direct relationship is consistently observed. Some evidence does indicate, however, that heavy television viewing is related to social malfunctioning (though the causal direction of this relationship has not been determined).

In addition to identifiable pieces of information that people learn from television, their total image of reality is affected by what they watch. Generally, parents do not exercise very much control over the amount or kind of television their children watch. Substantial research indicates that, if parents are concerned about what children take away with them from their television viewing, they can help their children a great deal by taking an active role in television viewing. They can direct their child's attention to certain elements of the program, share their own personal attitudes and values, and encourage or discourage emulation of what they have seen on television.

THE TEACHER

The Structure of Network Television

The preceding section documented the existing support for the proposition that television content plays a significant role in the lives of children, including both learning and performance. It also demonstrated the high degree of autonomy and authority that falls to the child regarding his or her television viewing and the fact that potential parental influences in this area are usually unfulfilled. Given the importance of television painted by this picture, our next step is to determine what is known about the medium itself. Unfortunately, most research on television has studied its impact on the audience while there has been correspondingly little research on the people or organizations responsible for the content.

Television in our society is a mass communications medium characterized by several distinguishing features which substantially influence the nature of its content.

- . Perhaps the most important feature is the role of television in our society as a marketplace. Members of the industry think of their viewers as "buyers." This nomenclature is revealing. Whereas most of us might refer to the aggregate of television viewers as "the audience," employees of the television industry refer to them as "the market." The terminology is from commerce, not theatre (Siegel, chapter 2).
- . As a commercial enterprise concerned with selling goods, television is primarily oriented to adults. Even though there does exist a handful of programs designed for children, these are frequently on public television, with specific educational goals and with money allocated for formative research. They with their research effects, will be considered later in this section. Since adults are the principal spenders in our society, American commercial television, the supreme sales machine, is not aimed specifically at children. The 8-year-old is not usually foremost in the thoughts of the television producer, writer, or executive; the 3-year-old is not thought of at all (Siegel, chapter 2).

Television content is produced in a setting characterized by an extensive division of labor. This means that the power to determine what is broadcast rests with very few people (Cantor, chapter 7). Television content is theoretically the responsibility of the local stations. Yet, because of economic pressures and audience pressures, local television stations depend principally on outside organizations to provide them with news and with documentary and entertainment programs. They depend on Hollywood production companies, or other production companies, and the wire services. If a station is not affiliated with a network, the station must buy programs from distribution or syndication companies which in turn buy programs from production companies or networks. Thus, the manufacture of entertainment programming is concentrated in a handful of production companies, and its dissemination is dominated by the three commercial networks. (The public broadcasting network is discussed later in this chapter.) Since the 1960s, the networks have had almost total control of programming. "The creative freedom so greatly valued by the creators of cultural symbols is limited by the networks who select what will be produced, censor content once a show is in production, and who have power over the scheduling of shows on the air" (Cantor, chapter 7). *

Given the marketplace milieu, the production of popular drama is most frequently a reflection of economic values, not of the creator's own personal values. Some research indicates that producers, writers, performers, and directors frequently hold personal values different from those demonstrated in their shows, but they feel powerless to communicate their values on television. It is only the unusual director, producer, writer, or actor with considerable power in the marketplace who has the freedom of choice in the selection of content. Most creators rarely have artistic control over their product (Cantor, chapter 7). In recent years, there have been several attempts to change and/or expand this locus of control, and there is some evidence of increasing influence by the creators of program content.

Even if creators had more control over content, several circumstances make it unlikely (or, at best, difficult) for them to develop content that takes into consideration the needs and abilities of their viewers, particularly children:

- (1) The television performer and producer do not have the benefit of direct feedback from their audience. They do not observe the effect of their ministrations; they do not see the facial expressions of the people who watch their show. They know little about the impact of their work, particularly on children (Siegel, chapter 2).

- (2) This is exacerbated by the fact that television producers are, for the most part, unaware of relevant research data. They do not, in general, read the scholarly journals in which such research is published, and what they do read is usually translated in popular magazines or trade publications and is frequently biased (Siegel, chapter 2). The other side of the coin is that much scholarly research is done without the benefit of understanding the television industry and frequently reflects a lack of respect for the artistic, economic, and legal constraints on the medium. This attitude, in turn, results in industry members' heightened suspicion of communications research and social science research in general.
- (3) There is no system of selecting or educating television producers and performers. No attempt is made to link their creative abilities to the public interest or to help them interpret relevant research findings about the impact of their work. "Most modern professionals in America rest on a scientific base of research and investigation which informs and sometimes transforms their practices. When we examine the communications industry, we are struck by the lack of comparable interface with research" (Siegel, chapter 2).

While the television industry is regulated by the Federal Communications Commission, this regulation is usually limited to issues related to spectrum allocation and other technical aspects of broadcasting. For a variety of First Amendment reasons, the FCC has not felt it has the authority to involve itself in issues related to program content. Thus, there is no political or governmental mechanism whose goal is to assure that commercial television reflects the public interest (including the well-being of the young).

In summary, then, in the marketplace milieu of television production, there is no mechanism by which television creators currently receive direct feedback on the impact of their programs; no system currently exists to educate or certify the "television teacher"; and there are no effective means for the public to express its opinions on the television industry's use of public airwaves.

The Case of Public Broadcasting

As we noted earlier, the preceding statements are primarily descriptive of American commercial television. Public broadcasting in this country is a somewhat different matter. The purpose of public broadcasting is to entertain and to inform with high quality alternative programming unavailable on commercially operated stations. As an industry, however, public broadcasting is small. Within the communications industry public broadcasting accounts for less than 2 percent of employment and public broadcasting employees account for about 8 percent of those employed in radio and television. However, in terms of programming specifically designed for young people, public television has gained considerable prominence and attention.

The largest proportion of PBS time is given to transmitting children's shows. These shows are frequently critically acclaimed, have deliberate educational goals, and use formative and summative research in their program development. Findings from research associated with such programs as Sesame Street and Mister Rogers' Neighborhood are cited in several of these chapters (Mielke, chapter 8, Holtzman, chapter 9). As important as these programs are, however, it should be kept in mind that this kind of television constitutes a relatively small proportion of the total time a child will spend viewing television.

Trying To Understand Television Curriculum

Given the above insights into the industry, it is logical and useful to review what is known about the content messages conveyed in television's curriculum. While the current state of research does not allow us to go directly from content to effect on viewers, or tell us what was the intention of the communicator, systematic content analysis enables us to draw inferences about the society in which television programming should be understood and evaluated (Cantor, chapter 7). Content studies frequently concern themselves with coding and counting. (How many women appear in a major role, compared to men, in an average prime time hour? How many "intimate activities" are engaged in by characters on programs between the hour of 8:00 and 9:00 p.m.?) Content studies by their very nature tend to isolate and spotlight discrete items of information. The complexities and subtleties of intention and expression are difficult to count, graph, and chart. Content studies in recent years have concentrated on the role and status of women and of minority groups, on different systems of coding violent or prosocial behavior, and on the proportion of people employed in various job classifications, for example.

The chapters commissioned by NIMH refer to content analyses in several of these areas. A much more complete picture of television's curriculum through content analysis is needed and would contribute significantly to our understanding of the full range of social messages portrayed.

Another factor affecting the ability to properly assess television's content curriculum is its changeability. Television programing decisions are frequently made on a kind of "me too" basis. What works for one network is likely to be picked up by others. After several years of a certain trend, a new program format or content emphasis may be successful and then the cycle may repeat itself. Thus, we have had cycles of medical shows, police and detective programs, family or romantic situation comedy programs, etc. In order to keep up with the television curriculum it would be necessary to analyze television content on an ongoing basis or at least at periodic intervals.

Finally, content and production variables interrelate, and research suggests that children are influenced by television's formal properties in addition to (and sometimes independent of) television content (Williams, chapter 4). Thus, in addition to understanding television content, it is important to understand the nature of production variables and techniques "the language of television" (Miekle, chapter 8). However, because of the inherent interaction between content and production (the effects of content depend in part on how television is produced, and the effects of production vary according to the content presented), it is difficult to form specific principles regarding the influence of production techniques or of the formal properties of television. What formative research does exist is found primarily in independent production companies which produce educational programs for public broadcasting. Most commercial production companies do not see the necessity of nor allow time or money (under current structures) for undertaking the formative research that would diagnose the decision making process and provide greater insight into the influence of television's formal properties.

Television's Critics: Consumer and Advocacy Groups

To add further to our understanding of the television industry, it would be useful to know something about the consumer milieu in which current programing is developed. In this case, there is even less research to provide insight.

In the past decade, there has been a rising consumer movement which may be characterized as an attempt to temper powerful commercial interests with an awareness of human problems such as pollution and population growth. The television industry has not escaped the pressure of this movement.

The media reform movement was ushered in 10 years ago with the formation of Action for Children's Television. This was some 20 years after the introduction of television to this country. Today there are at least 65 organizations with specific programs in media reform. The activities of these groups are varied and include (1) educational endeavors to raise public awareness through publications, workshops, meetings, and other presentations; (2) attempts to monitor television programs and advertising and provide feedback to the industry as well as to governmental agencies and the public; (3) lobbying and legal activities challenging regulatory mechanisms to be more responsive to public concerns about television; (4) bridge-building activities to increase industry awareness of public needs and social realities; and (5) activities designed to gather publicity to broaden their base of financial and moral support (Feinbloom, chapter 10).

There has been no systematic assessment of the impact of these reform groups either on the industry or on increasing public awareness about issues related to television. There is some evidence of increased awareness on the part of the public about television's influence on child development. However, there is also evidence that this greater awareness has resulted in an increased feeling of powerlessness since recommendations for action are not usually specific enough for the public to define a meaningful role for itself in influencing television programming.

Clearly, the broadcast industry is sensitive to its critics, including media reform groups and the general public, although reactions are frequently mixed. For example, many members of the industry currently see the growing public pressure as akin to the McCarthyism of the 1950s and defend their right to free speech. Still others in the industry have reacted by attempting to steer away from any controversial materials to stave off public criticism. To date, the relation between the broadcasting industry and media reform groups has been primarily adversarial, although in the past few years there has been an attempt by several groups (e.g., ACT, Project on Human Sexual Development, United Church of Christ) to work with the industry in increasing awareness about public needs and desires, in disseminating findings in educational research, and in seeking ways to work together to improve television.

Summary

American commercial television is a marketplace where viewer equals potential buyer. Programming decisions are in the hands of a few whose primary concerns are adult consumers. The current system allows for little or no effective communication between television creators and the public. Television creators are rarely aware of relevant research or of the impact of their work on those who watch it and there is no political mechanism to insure that commercial television reflects the public interest and the well-being of the young.

Public broadcasting offers an alternative to that system, and although proportionately it offers more "quality" programming for children, its influence is minimized by the fact that the amount of public broadcasting materials that children watch is relatively small compared to their total viewing.

Comprehensive knowledge and understanding of the television curriculum are limited by the narrow range of content studies that have been conducted to date. Also, because of the changeability and "trendiness" of television, content analysis quickly can become outdated. Finally, we know that the content of a program and its production variables interrelate in significant ways. New methods of investigation need to be found to take this into account.

Despite the limitations of our knowledge, we are aware that television content can increase either prosocial or aggressive behavior. It can also influence attitudes and perspectives about the roles of men and women, about different minority groups, and about reality in general. We also know that television can affect the purchase of consumer goods.

Finally, over the past 10 years, the work of interest, advocacy, and media reform groups has increased. It is a force whose power is not known at this time, but these groups will most likely continue to be major players in the arena of commercial broadcasting.

ADDENDUM

One topic cuts across all considerations of television as a teacher and needs to be considered separately. This is the underrepresentation of females in every aspect of broadcasting from the inception of a program to the research on its impact.

Women are notably absent from key decision making positions at every level of the television industry. There are almost no women in top decision making jobs at the network level. There are few women directors, few producers, and only 20 percent of the Writers Guild of America, West, are women. Women are found at the studios and in production companies, of course. They are in charge of wardrobe or makeup, or serve as "script girls" or "assistants" (Cantor, chapter 7). But the important decisions regarding television's curriculum remain almost exclusively in the male domain.

The image of women on television is equally unbalanced. Recent research has documented the low proportion of women in major roles on television and further demonstrates that, when women are portrayed, the range of roles available to them is limited. A sample of content analyses conducted over the past 7 years indicates that:

- . Approximately 75 percent of all major characters on television are male. In action adventure shows, over 85 percent of all major characters are male.
- . When the personality traits of male and female characters appearing on television are compared, researchers found that television females are more affectionate, sensitive, romantic, incompetent, submissive, emotional, illogical, timid, dependent, attractive, and younger than males.
- . When they are portrayed as employed, women are most likely to be in traditional female occupations (secretary, nurse, etc.) that allow them little authority.
- . Women fit in the traditionally accepted roles of wife, mother, or girlfriend, remaining in the home, while the men work outside.
- . Not only are men in more prestigious occupations, they are also in a wider range of roles, males being shown in over four times the number of roles as females.
- . About 47 percent of all close relationships on prime time television are between men; 43 percent of close relationships are between men and women; 10 percent of close relationships are between women.
- . Television indicates to the viewer the marital status of approximately 90 percent of all female characters, but about 50 of all male characters.

And what of communications research? Many such studies neglect girls altogether or ignore the findings of sex differences in learning from television. In a Newsweek article, five pages were devoted to "What Television Does to Kids" (February 21, 1977). Age, race, and class were suggested as factors which mitigate the effects of television viewing, but gender was not mentioned at all (Cantor, chapter 7).

The following are findings from a secondary analysis of 26 studies from the Surgeon General's Technical Papers:

- . Seven studies do not have any girls as subjects in the sample, only boys, and there are no studies of only girls.
- . Fourteen studies analyze data by gender. In eight of these, there are clear differences between boys and girls. (The usual finding is that boys become more aggressive after viewing television violence; girls do not.) However, most reviews of the Surgeon General's Report ignore or give little attention to these gender differences.

- . Four studies have both girls and boys in the sample, but if there were differences between them, it is impossible to determine, since the findings were reported from the combined sample only.
- . In the one remaining study, it is unclear whether the subjects include males and females, since only "adolescents" and "students" are mentioned.

Since the Surgeon General's studies were completed, there has been a growing interest in the impact of television on girls. These studies seem to focus primarily on gender role socialization and the lack of positive role models presented to girls. They do not focus on how gender and gender roles mitigate or enhance learning from television in general. In only one of the review papers for this project was the issue of gender discussed at length (Cantor, chapter 7).

Clearly, today's television pupil will gain little insight into the perceptions many women have of themselves or want for their daughters. Similarly, children will gain little information on the range of roles available to women in our society. We, too, as researchers and policy-makers, will be less effective if we systematically neglect examining the relation between gender and television as teacher.

RECOMMENDATIONS

In this part of the paper, priority is given to those recommendations that (1) build on previous research and (2) suggest new research that, in addition to expanding our knowledge and understanding about the relation between television viewing and childhood learning, also provides information that can be used in planning and executing effective policy interventions. Unlike many other areas of scientific inquiry, our concern with television as a teacher is of more than theoretical interest. Parents, teachers, professionals, and policymakers alike are interested in determining ways to increase the positive use of the medium and to decrease harm to the child viewing television. Basic and applied research which facilitates these goals certainly seems most relevant.

This summary of recommendations makes the usual distinction between research recommendations and recommendations for action. Wherever possible we have tried to indicate how the recommended research can lead to action or how effective intervention programs can build on research or provide additional data to supplement current findings from the social sciences.

Research Methodologies

Several review papers discussed the pro's and con's of alternative research methodologies. The logical conclusion seems to favor a continued reliance on the accumulation of findings from different methods rather than attempts to determine the single most effective research approach. Such a perspective recognizes the validity of alternative approaches. Thus, while correlational designs (usually surveys and field studies) are informative and necessary to help us understand the meaning of findings within the context of everyday life, they do not allow us to determine unambiguous cause/effect relationships or the direction of causation. The use of experimental and quasi-experimental designs is important in helping us make causal inferences and explore the processes by which such effects occur. However, despite the sensitivity of the laboratory-type experiment, it is vulnerable to criticism regarding the artificiality of the stimuli, the dependent measures, and the setting (Comstock, chapter 5). Thus, using information from both laboratory studies and field studies would (a) provide a better base for recommendations about what to do in the "real world" about television viewing and its effects and (b) would build the most widely acceptable and persuasive case regarding the role of television as a teacher.

In addition, there is a need for much research in this area to move beyond measures which are based solely on self-report. There are good reasons to question the validity of many self-report measures, not because people lie, but because people often are not sufficiently aware of what they really do. At the least, we need reports from those under study and from other persons whose influence is being determined. Better still would be measures which do not depend on self-report by anyone. It is possible, albeit costly and time consuming, to observe television viewing and interaction vis-a-vis television, and we need at least some data derived from such observations. Without recourse to those measures which are more likely to be valid, we will always be left wondering how accurate children's or parents' responses are. And until more of our information is based on other than self-reports, we must be cautious in the conclusions we draw in some research areas (Dorr, chapter 3).

This multimethod approach requires unusually careful planning by those responsible for the distribution of funding (1) to determine the appropriate methodology for any given research topic, (2) to evaluate which methodological approach will result in the "type of finding" (correlational or causal) deemed most useful to the scientific community, to the general public, and/or to the television industry, and (3) to decide what mix of approaches in what proportions will allow for the greatest cumulative development of evidence from a variety of measures. Each methodology has its own role to play and can support or test the validity and utility of findings from different approaches.

An Interaction Model of Television Influence

Given the finding that television is only one of many socializing forces for children, the effects of television on children at different stages of development are more likely to be understood if multiple interaction models are used in research. Research should build on an assumption of interaction rather than on the assumption that television's impact on the child is necessarily direct. For example, one indirect way in which children may be influenced by television is through the absence of socialization by their parents or peers when time is spent with the television set instead. Another example is the lack of time spent on skill development (including social skills) when television viewing is consuming a great deal of a child's time. In addition, research that would identify ways in which television and other persons interact to influence youth would be most useful.

Communication Between the Research Community and the Television Industry

Given the lack of mechanisms allowing for feedback to the television industry about the short-term and long-term effects of its programming, several steps could be taken at the research level to improve this situation. (Other recommendations regarding the dissemination of research findings are discussed later in this section.) Members of the television industry should be encouraged to participate in the formulation of research goals and methods. Understandably, many social scientists fear that such association will contaminate their studies, or at least give the appearance of contamination. However, industry involvement in research could make members of the television industry more receptive and less suspicious of social science research. Such involvement might also have the effect of informing social science researchers more adequately about the television industry (including its constraints and its opportunities). Such interaction might encourage the development of more relevant and more realistic research designs, or, at the very least, it might encourage social scientists to report their findings in a language that can be understood by the concerned and interested broadcaster. All too often those of us who regularly write for scholarly journals are so familiar with the jargon of our discipline that we tend to forget how formidable such reports can seem to someone whose livelihood involves familiarity with different terminology.

Content Analyses

There is a clear need for more broadly defined and systematically conducted content analyses of all program types to help us determine major themes and the range of variation in the social messages communicated to children by television. Such content analyses could (1) enable us to speak with more certainty about the nature of television's full curriculum, (2) allow us to examine the relation between a variety of media messages and effects on learning, and (3) allow us to consider television's roles in portraying positive as well as negative messages. Such an expanded view might help to reduce the resistance and paranoia that currently beset most broadcasters when they hear of communications research.

In addition, if such systematic content analysis was undertaken, it could provide a bank of video tapes that have been carefully content-analyzed for use in developmental research. Developmental research is time consuming and frustrating to conduct, because such analysis requires special equipment, trained coders, special technicians, etc. Unless one has a very large research program and a considerable sum of money, most developmental researchers cannot conduct comprehensive content analyses. However, a bank of video tapes analyzed for approximately 10 content areas would be extremely useful in facilitating needed developmental research (Williams, chapter 4).

Recommended Topic Areas for Future Research

Peers

From various sources we know that youth talks with its peers about television. Many believe they watch television partially so that they will be able to discuss it with their peers and many use television material when playing with their friends. We do not know, however, anything about the extent to which viewing patterns are determined by peers or the ways in which peer pressure affects viewing time or program choices. We know very little about the extent of peer influence or what is learned and/or performed from television programming. Since peers are certainly an important interpersonal influence on American youth, we ought to examine the role they play in the use of television (Dorr, chapter 3).

Parents and Other Adults

Data suggest that--at least in the case of young children--parents, teachers, and other adults can effectively increase (or decrease) that which is learned from television and in addition, may be effective in mediating the performance of what is learned. Additional research in this area would be desirable to elucidate the ways in which learning may be enhanced for older viewers by parents and other adults, the ways in which evaluative comments from parents and other adults can mediate performance, the ways in which parents and teachers may encourage performance through post-viewing activities, and the ways in which parents and teachers may train children to mediate television's effects for themselves. More knowledge in these areas would provide useful information for establishing courses and demonstrating projects for parents, teachers and children to increase both learning and viewer discrimination (Dorr, chapter 3).

Since preliminary findings indicate that parents and other significant adults can have some impact in mitigating or enhancing children's learning from television, and since parents themselves evidence considerable concern about their children's television viewing, it is striking that

so few parents take active steps to control this viewing. Only a few investigations have sought information about the facts which lead some parents to control their children's viewing more than others, and the reports from this handful of studies are inconsistent (Dorr, chapter 3). More research is necessary if we are to determine what factors lead parents to exercise controls over both the time spent viewing and the content viewed. Priority attention should be given to those variables that would be useful in developing programs to help parents control and monitor their children's watching. All too often, research focuses on such background variables as social class, educational background, ethnicity, etc. However, such variables are not usually helpful in policy intervention. Among the variables suggested for priority exploration are: (1) parental familiarity with what their children watch and with what understanding their children have of what they watch; (2) parental views about the desirability of program messages; (3) parental goals for the development of particular skills and interests in their children; (4) parental beliefs about the effects of television viewing in general, and of viewing certain types of content; (5) parental experiences with the effects of television on their children; (6) parental ideas about the range of ways to control television viewing; (7) the extent to which parents have succeeded in previous attempts to control viewing; and (8) parental beliefs about tangible benefits derived from children's changed viewing habits.

Examining these variables would give us additional information for research and for working directly with parents, which is what is ultimately needed if one action goal is to encourage parents to exercise more control and influence (Dorr, chapter 3).

Children of Different Cultural Backgrounds

Much of the research has been done with children from mainstream America. Many studies have compared findings for white and nonwhite children or children from upper or lower socioeconomic background; however, we still need a better understanding of the impact of television on children from various subcultures in our society. Such research would expand our knowledge of differential effects and would also help determine how television affects the process of socialization of subcultural members into their own culture, other subcultures, and the mainstream culture (Williams, chapter 4).

There has been a growing interest in international studies, particularly in developing countries (because they offer new opportunities for more rigorous control of experimental variables under field conditions), and for impact studies upon populations not yet exposed to television. In North America and Western Europe, audiences are so saturated with television programming that nonviewing control groups are virtually impossible to find. Nevertheless, such comparative international research has minimal applicability

to our own policy concerns. Comparative studies of ethnic and social class groups within the United States seem of greater importance and of more immediate relevance to policy formation for the Federal Government or television networks than would similar studies conducted elsewhere (Holtzman, chapter 9).

Children With Social, Emotional, and/or Learning Disabilities

Most research on television as teacher is based on studies of "normal" children, and very little has been explored about television's role in the lives of children with social, emotional, or learning disabilities. One of the chapters in this volume (Rubinstein, chapter 6) deals specifically with recommendations regarding institutionalized children. The reviewed research demonstrates that television has an impact on emotionally disturbed children and suggests that ways could be found for improving the use of television as a socializing agent for the emotionally disturbed. In keeping with our concern for interface between useful action and research, the proposal that research be undertaken to assess the impact of television as a therapeutic intervention seems especially useful and profitable. From a research point of view, the controlled viewing of institutionalized children lends itself to a systematic assessment of television's influence (provided that the external variables are controlled). This would furnish a unique opportunity to consider augmenting the care and treatment of these children by converting what is usually a casual leisure time activity into one with more tangible therapeutic benefits; it would, at the same time, add to our understanding of media effects on children with disabilities. Such a research approach might be profitably explored with children with other handicaps as well (such as learning disabilities).

The Television Industry

There is a need for considerably more knowledge about the television industry itself. Careful inquiry into the various decision making roles of the writer, producer, director, story editor, and network executive would contribute substantially to the understanding of where and how to intervene most effectively in the future.

All three commercial networks now have at least a small inhouse research staff. Exploring how these departments function and their role in program development would aid in determining what methods would most usefully bring about improved interface between research findings and commercial program development. Such information would also provide insight into bridge building between the social science community and the television industry.

More information is also needed on the interaction between television content and production variables to determine if any generalizable principles exist that would aid our understanding of the impact of television production variables (and/or other formal properties of the medium) on children's learning.

Recommendations for Action

Despite the need for additional research, some of the review papers argue persuasively that in many areas enough information is already available to develop useful demonstration programs and policy guidelines. Such programs would be of benefit on two levels. First, they would provide help and support to concerned parents and teachers and would benefit the television-viewing child. Second, such programs would demonstrate the utility of social science research in this area and would indicate a commitment to follow through to action, lending important public credence to the entire inquiry into television as a teacher.

Increasing Television Literacy

Given the substantial amount of time most children spend with television (there are relatively few children who spend less than 2 hours a day watching television), we need to develop programs that will provide young people with the most benefit and the least harm possible from the television programs they watch.

Television literacy courses should help viewers more effectively moderate television effects themselves. Some groups, such as Chicago's "Prime Time School Television" and New York's "Television Awareness Training," have already begun to develop demonstration programs in television literacy, and certainly these groups deserve encouragement.

In addition, the industry itself could be persuaded to help by developing more sophisticated television critics analogous to those who traditionally deal with books, theatre, and film in the print medium. They could, for example, preview a program scheduled for the week to come, discuss the appropriateness of the program for various audiences, and suggest opportunities for using the television experience to stimulate additional learning (Feinbloom, chapter 10). (The Television Information Office already provides some of this information to teachers through its publications.) There could also be reviews of programs with critical analyses of their quality of design, production, and acting.

An important point is that children should be included in this process of criticism and evaluation. Children need to be provided with much more information about the technical aspects of the medium which is so significant in their lives. School-based curriculum which would help them distinguish between reality and fantasy, between advertising and program content, and between the purpose of different programs (to educate, to entertain, to sell, etc.) would help children become discerning viewers. And there needs to be more discussion about television on television, rarely itself the topic of news or public affairs programming.

Parent Education

Recently there have been some attempts to encourage parents to take a more thoughtful and active role in their children's television viewing. Given the evidence that parental involvement can mediate television effects, such programs ought to be expanded and encouraged. For example, Action for Children's Television has begun distributing tags to hang on television sets which remind parents and children there is such a thing as watching too much television. This is a first step in a planned program of parent education. Another example is the Television Awareness Training workshops sponsored by the United Methodist Church's Media Action Research Center which are designed to encourage parents to become familiar with what their children watch and to exercise greater control over it. Both of these efforts are laudable, but they are limited by the lack of information about what will actually help parents control and mediate viewing. Most programs are usually not specific enough in the information and suggestions they give to parents. Parents frequently lack the necessary tools for much control. They do not generally think about where the television set is placed, what they themselves do with television, what varieties of rules in the family are possible, how consistent and firm they are in enforcing rules, how much they need to provide attractive alternatives for children, or how confirmed television viewers will learn other ways of amusing themselves. Moreover, most parents do not really believe that they can be successful in controlling or mediating viewing, or that their children's consequent behavior could truly be changed in desirable ways. There is consistent evidence that people do not engage in behavior-change programs unless they have good ideas of how to go about it and strong beliefs that the results of change will be desirable. So if parents lack these now, programs for parents must provide them. Most existing parent education programs do not go nearly far enough in these two areas (Dorr, chapter 3).

A great deal of publicity about children and television has served only to alarm and concern parents and has left most of them feeling helpless about what to do. A direct effort to get other kinds of articles into

the popular media, describing approaches to controlling and monitoring children's viewing, would be another informal way of enhancing parent's feelings of effectiveness and perhaps motivating them to find suitable ways for controlling television viewing within their own homes.

Intervention to Improve Peer Relationships

The reported relation between high amounts of television viewing and troubled peer relationships is of concern to parents and those professionals who deal with children and youth. Devoting an unusually high number of hours to watching television necessarily leads to spending less time with peers and, at least for some children, it is associated with unsatisfactory peer relationships.

Such evidence should be a signal to parents, teachers, pediatricians, family therapists, etc., to examine the child's social skills and integration into a peer group. Programs could be established to identify young people who watch unusually high amounts of television so that those who are having difficulties in peer relationships may be helped to develop better interpersonal skills. Such programs might be based on screenings conducted through school, medical facilities, mental health programs, and community and youth organizations (Dorr, chapter 3).

Development of a Bank of Content Analyzed Video Tapes

This recommendation ties directly into the research recommendations cited in the section, "Pupils," earlier in this chapter. It is mentioned here because of a belief that such content analyses of video tapes would provide an extraordinary resource for a variety of parent and child educational programs. These video tapes could be duplicated and used (with accompanying content analysis and written materials) as part of an in-school television literacy course. They could be used by citizens' groups to increase public awareness about television curriculum, and they could be used to stimulate dialog and learning among members of the television industry itself. The benefits of such a resource to both research and social action would be immeasurable and ought to be a high priority for future planning.

Activities Directly Related to the Television Industry

A first priority should be the dissemination of research findings to the creative community. Most creators of television programming are unaware of relevant social science and communications research and thus lack the benefit such research could provide in programming decisions. There is now a considerable body of research about how television affects young people. Many academic and scientific meetings devote sessions to this topic which also appears in many journals and is discussed in introductory

textbooks of psychology and child development. This research, however, is simply not well known to people in the television industry (Siegel, chapter 2). Thus, activities that would encourage the translation of such research, highlighting its relevance to television decisionmaking should be supported.

It is not sufficient to send reprints of the relevant research to the network departments of social science research, as this information seldom reaches the practitioner. Instead, efforts are needed to educate not only network researchers but also persons who are responsible for the characters, interactions, and themes in television programs. Efforts such as those now being undertaken by the Project on Human Sexual Development provide one model. Such activities should be supported and expanded. By bringing together researchers and scholars in a given field with television creators, lines of communication can be opened, creating feedback loops by which the results of forthcoming research can be made available to the industry to assist its members in future programing.

To aid in this process of translating social science research, workshops and seminars for science writers would help educate them to more effectively and accurately report the results of research on television and its effects on young people. The Division of Developmental Psychology of the American Psychological Association is currently investigating ways to strengthen the links between developmental psychologists and science writers in order to enhance the quality of research reports these science writers transmit to the reading public. Comparable programs specifically relevant to television reporting could also be explored.

In addition to translating and disseminating research findings to the television industry, support should be given to the development of excellent schools of communications in universities in which personnel for the communications industry may be educated and in which research on the media may be centered. The professional schools of journalism and communication at many universities have not yet achieved the solidity, stability, and breadth of other professional schools. They are not yet as secure in their ability to attract high quality faculty (including practitioners as well as theoreticians) and excellent students (Siegel, chapter 2). Improved schools of communications could become important centers for the interface of research and practice. They could become important training grounds for likely new talent and encourage the development of trained professionals from among those groups which are still poorly represented in the decisionmaking process of the medium itself (minorities and women, specifically).

Finally, the television industry should be encouraged to develop inhouse research capabilities which draw on the current level of sophistication in the behavioral sciences. At the present, the network research staffs are small, with limited operating budgets. The staffs of inhouse research groups would not only interface with the university research community, but they would also participate in efforts to educate the production and creative staffs concerning research findings pertinent to their work. Such staffs, if improved and given more prestige, could provide formative research information similar to that available to the research staffs of the Children's Television Workshop.

Formative research is most useful if performed inhouse because it requires an insider's access to the real production problems, to the real production decisions, and to the real set of feasible options. In the inhouse setting, formative researchers would not be disinterested third parties who pass judgments on processes and products. They would rightfully be expected to be as committed as other members of the team, but their inhouse role as formative researchers would enable them not only to spot problems but to go on to suggest improvements and solutions. The utility of formative research is heavily dependent on good interpersonal relationships between researchers and producers, but since this cooperative link is not necessarily a natural one that can be legislated it must be nurtured carefully, both by the researcher and the production people (Mielke, chapter 8).

We have suggested that such research capabilities be developed through the networks because, for financial and political reasons, this might be the most realistic way to motivate the development of such staffs. However, it is possible and would be highly desirable for major production houses to develop their own capability for formative research. For example, a few production centers have used formative research in the development of several of their most popular shows. However, such research programs tend to be spotty and, after the program development stage, the staffs are usually disbanded until another need arises.

Even though all programs that children watch could benefit from such research, the most obvious places to make use of formative research programs are those houses that produce "goal oriented" children's programs. Another model that this author is aware of was used by Filmation Studio in the development of one of their Saturday morning cartoon programs. They assembled an advisory panel of noted psychologists, educators, and sociologists to advise them on character development and the benefits of various program themes. While the research approach was less rigorous than the ones suggested here, it resulted in a more deliberately educational children's program than is usually found on Saturday morning commercial television.

Media Reform Groups

In several places in this chapter we have referred to the work currently being done by various media reform groups in this country. These groups are in chronic financial need. They are not self-supporting, and most operate on low budgets and depend on volunteer help. They are working to influence a multimillion-dollar industry which has access to all kinds of power, not the least of which is the control of their own (and the most influential) medium of mass communication. In order to provide consumer groups with a fair hearing, several relatively simple steps have therefore been recommended, steps which, if not considered cautiously, might jeopardize the necessary independence of these media reform groups. (1) The presentations by consumer groups to regulatory agencies should be publicly financed, covering preparation costs and travel expenses. The FTC currently supports this principle, the FCC does not (Feinbloom, chapter 10). (2) When there is an important issue affecting public well-being and health, and the case of the television industry is being well publicized, public or private support should finance the presentation of scientifically valid but alternative points of view (Feinbloom, chapter 10). (3) A coordinated program of practical research on parent education, financial assistance to consumer groups to disseminate information, and followup research to evaluate the effectiveness of the program and its impact on parent behavior would be beneficial.

Final Thoughts and Recommendations for Intervention Programs

The recommendations listed here stress the coordination of research and intervention programs. Given the history of such recommendations in the past, we cannot overemphasize the importance of follow-through mechanisms. There have been many efforts over the years to stimulate recommendations (the Surgeon General's Inquiry, the Reston Conference, etc.). However, none has resulted in the development of a mechanism whereby all interested parties - parents, researchers, industry spokespeople - can collaboratively work together toward improving television for children. The problem falls into the category of "ineffective knowledge transfer and utilization" (Rubinstein, chapter 6).

Very recent efforts to develop such long-range mechanisms have come from a variety of sources: (Rubinstein, chapter 6).

The Foundation for Child Development has developed a proposal for establishing a national observatory of child development. This recommendation calls for a public corporation with a minimum lifespan of 15 years. It is intended to be supported by private and public funds. Its mission would include conducting national surveys on how children are changing over time, examining the developmental process, and conducting scientific research and disseminating findings to advance our understanding of child development. Included in the topics to be considered would certainly be the area of television and children.

Somewhat more focused on the topic of television is a comprehensive proposal for a national endowment for children's broadcasting. This proposal is an outgrowth of a feasibility study, sponsored by the John and Mary R. Markle Foundation, which calls for a major new effort to develop alternative programming to meet the needs of children. The project outlines a longer term effort to upgrade broadcasting for children and to sponsor program research and formative research to achieve the goals of the entire operation.

In still another recent development, preliminary efforts are underway to sponsor Federal legislation to establish a television impact center whose purpose would be to monitor television programming and its effect on children. This center would sponsor research which would increase our knowledge and provide general guidelines to improve programming and disseminating of information to the public. It certainly indicates a continued interest in meeting long-term needs and followup.

All these efforts at establishing some long-term process to do something systematic about children and television are encouraging signs that attention is being paid to the need for continuity. However, a recurrent failing of all previous approaches to effecting change in this area is that follow-through somehow has never taken place. Until collaboration is fostered and follow-through mechanisms are developed, it is the opinion of this author, and of many authors of the review chapters, that the full potential for the positive role of television in the lives of our children will not be realized.

- * These market structures are now undergoing substantial changes. The development and utilization of cable television, broad band satellite transmission, video disc and tape, direct broadcast satellite and related media technologies will have important implications for the economics of production and distribution and hence the content of programming.

REFERENCES

Television as a Teacher research papers included in this volume:

Cantor, M.G. "Television Drama in Commercials: A Report on Content and Context with Emphasis on Women and Girls."

Comstock, G. "Television and Social Values."

Dorr, A. "Interpersonal Factors Mediating Viewing and Effects."

Feinbloom, R.L. "Public Influence and Television Programing."

Holtzman, W.H. "Impact of Educational Television Upon Young Children Around the World."

Mielke, K.W. "The Educational Use of Production Variables and Formative Research in Programing."

Rubinstein, E.A. "The Effects of Television on Institutionalized Children."

Siegel, A. "The Properties of Television and its Effects on Children."

Williams, T.M. "Processes Involved in Children's Learning from Television: A Review of Research."

In Addition:

Himmelweit, H.T., and Bell, N. Television as a sphere of influence on the child's learning about sexuality. Childhood Sexual Learning: The Unwritten Curriculum, Elizabeth J. Roberts (ed.), Cambridge, Massachusetts: Ballinger Publishing Company, 1980.

Dorr, A. Children's television: More than mere entertainment. Harvard Educational Review, 44(2):213-245, 1974.

Chapter 2. THE PROPERTIES OF TELEVISION AND ITS EFFECTS ON CHILDREN

Alberta E. Siegel, Ph.D.

Television is an excellent technology for communicating with the young child, an illiterate. Young children rely on their eyes and ears for social communication, and they are especially alert to movement in the visual field and to change in the auditory field. They derive meaning from vocal intonations, postures, gestures, facial expressions, and movements toward proximity or remoteness. All of these are conveyed to them when they watch television.

The human child, like his primate cousins, is the product of a long history of evolution, and the effect of heavy selection pressures has been to favor an individual with certain gifts for communication. Although the newborn infant is responsive primarily to proximal communications--the way things smell, feel, and taste, very rapidly he becomes attuned to distal communications--the way things look and sound. An infant's perceptions are soon dominated by inputs to the eye and ear. We may suppose that his communicative equipment has proved its usefulness to the young child in enabling him to maintain proximity with his caretaker (i.e., in his attachment behaviors). The child's abilities to derive meaning from his surroundings are also helpful, of course, in his efforts directly to meet his own needs for food, warmth, etc.

Speech and language are the hallmark of the human condition, but they play little role in the life of the infant. The human infant, like other primates, is more attuned to nonverbal communication than to verbal. He derives meaning not from the words people say, but from their gestures, postures, and facial expressions, and from the tone of voice and melody of speech. It is only toward the end of the first year of life that he begins to understand a few of the words spoken in his presence and in the second year to speak a few words himself. The term "infant" means "without speech," but we are not misled into thinking that the infant is without communicative skills. He has them, but they are the communicative skills of all primates rather than the distinctively human skills: The infant's communicative alertness is not to language as the linguists define it.

Furthermore, the young child does not lose his receptivity to nonverbal communication as speech develops. The young child can understand us better if he watches us while listening to our verbal flow. And he can tell us how he feels through drawings as well as through words.

What we see in the young child is the legacy of a long evolutionary past. Attempts to estimate how long primates have been on earth suffer from inadequacy of evidence, but there is reason to believe that there have been primate forms for at least 25 million years, and hominid forms may have been around for the majority of those. Modern man, of course, is a very different creature from his hominid ancestors, and he has been on the scene no more than 40 or 50 thousand years. The evolution of the human brain to its present size occurred relatively recently. The beginnings of language probably antedate homo sapiens, but modern languages seem to have arisen during the final stages of prehistory. As the individual child develops speech, he is acquiring the recent human overlay to a communicative repertoire which in its totality is much older in human evolution than is language. Man the gesturer and man the posturer are more ancient than man the speaker.

Written communication is even more recent in human history. And, of course, written communications were not mass communications until the development of printing. Forms of printing existed in China and Korea at least 2,000 years ago, but the ideographic scripts of the Oriental languages did not lend themselves to mechanization. The same limitation did not constrain the European alphabet of the 15th century, so when printing and movable type were developed in the West five centuries ago they found ready use.

Although we cannot overestimate the significance of writing and then printing for human history, it would be a mistake to overemphasize their significance in the development of the young child. It is only an exceptional child whose brain is sufficiently mature to enable him to decode writing during the 4th or 5th year of life, and for most children it is during the 6th and 7th years that they begin to be able to read simple messages in their native tongue. And there is a further time period before written communication actually penetrates and transforms their thought processes. It would not be far off to say that most American children reach their 10th birthday before printed messages have any major transforming effects on their lives and thought.

It must also be mentioned that only in the 19th and 20th centuries has there been any serious effort to teach all children to read, and this effort has occurred only in the highly developed industrialized nations of the world. More than half the people in the world today can neither read nor write, even though practically every individual speaks his native tongue. Since the advent of writing, at most times and places in human history, literacy has been achieved only by the elite--primarily males with leadership roles in the church, the State, or commerce.

It is difficult to speak about human communication without belaboring the obvious. I find myself doing that, and the reason is that I believe that the implications of our knowledge of human communication have not been appreciated. I hear my colleagues emphasizing the importance of reading and writing in the socialization of the child and, in doing so, they seem to me to be attending to a form of learning which has had significance in only a split second of evolutionary time, while slighting the forms of learning which have been important throughout human evolution and indeed in the history of all primates.

Human society has been transformed since the advent of print, with the influence of Bibles, encyclopedias, novels, libraries, newspapers, journals, textbooks, comic books, and so forth. Before this transformation had extended beyond the technologically advanced parts of the world, however, we saw the advent of a panoply of new communications media--the phonograph, radio, motion pictures, and television. We may reasonably expect them to alter our social arrangements just as profoundly as printing has over the past five centuries. Indeed, the alterations may well be more fundamental, for these new media reach the nonliterate. The phonograph and radio transmit the language to the human ear, motion pictures convey postural and gestural communication to the eye, and the audiovisual media (sound movies, television) reach both eye and ear with an integrated message.

The rapid social spread of these new media is a testimony to their appeal. As soon as movies were available commercially, children started spending most of their discretionary income on tickets at the box office. As soon as television was introduced commercially in the United States, after World War II, American children started watching it. They spent 2 or 3 hours a day with television during its early years and spend 3 or 4 hours a day with it now. All but 2 or 3 percent of American homes now have television, more than have refrigerators or indoor plumbing. Children spend more time watching television than they spend on any other activity except sleep.

Although it has been apparent to every parent and every educator that children like television, behavioral science research on the impact of television and the other electronic media on children has been slow to come of age. I think there are several reasons for this.

In the first place, with the advent of the movies in the late 1920s and early 1930s, there was a lot of discussion about their effects on children, but with the primitive techniques of research then available, little could be demonstrated. Psychologists remembered these nonresults when the question of the effects of television was raised a generation later.

Second, the advent of television came when child psychologists were thinking in terms of an S-R model of behavior in which concepts such as reward, reinforcement, and drive reduction figured prominently. We thought learning occurred when reinforcement was contingent on the learner's behavior. There is nothing which happens on radio, the movies, or television which is contingent on the behavior of the listener, except turning on or off. When the viewer laughs, the comedian doesn't get funnier. When the viewer frowns or looks worried, the interviewer doesn't change the subject or interject a quip to change the pace. Since it was not clear how television could enter into a chain of reinforcing or punishing S-R sequences, psychologists found difficulty in conceptualizing how it could be significant in modifying behavior.

An exception was the catharsis theory, which had been clearly and explicitly stated in testable form in Frustration and Aggression in 1939. This book was one of our bibles in the postwar era in psychology, and much of the television research in the fifties and early sixties centered on the catharsis notion. There was the additional fact that the catharsis notion had to do with aggression, and public concern about television and children centered on the aggressive content of television. Moreover, the catharsis theory held meaning for psychoanalysts as well as behavioral scientists, and the 1950s were a time of rapprochement between these two. We have some useful reviews of our knowledge about catharsis (Berkowitz 1973; Stein and Friedrich 1975), and there is little or no evidence for catharsis of aggression through media experience. Much of the evidence is inconclusive, and where positive findings do exist they are in the opposite direction. Experiencing aggression vicariously instigates or heightens aggressive motivation; it does not drain or purge it. Even the Surgeon General's Scientific Advisory Committee on Television, a cautious group, agreed with that conclusion.

Third, it is expensive to conduct research about television, and when large amounts of money have been available for research, most psychologists have felt there were more urgent calls on it.

As we became more interested in the child's mind, its furnishings, and functioning, our interest in television grew. Partly through the influence of Baldwin's ground-breaking textbook, partly because more American psychologists were traveling to Geneva, and partly because Hunt and Flavell wrote interesting and persuasive books about Piaget's work, American psychologists "rediscovered the child's mind," as Martin phrased it. Having done that, they got interested in what was being beamed to that mind via its modern electronic appurtenances and extensions. The American child spends more time watching television than he spends in the classroom. We see few dropouts from the electronic school and very little television truancy.

Perhaps even more significant than the rediscovery of the child's mind, in encouraging research on television, were the pioneering investigations of Bandura in the early 1960s. His studies were within the context of behavior theory. Their results had the effect of stretching and augmenting that theory in useful ways. Bandura demonstrated that children can acquire new responses through observation and imitation, without external reinforcement and without extensive rehearsal or practice. This occurs when they are observing and imitating filmed or videotaped models just as it occurs when they are observing and imitating live models in face-to-face situations. The responses which Bandura studied initially were aggressive and antisocial responses, so his results raised a furor with those who felt that television violence makes no difference in the lives of children. This ruckus about television, however, tended to obscure the significance of Bandura's findings for psychological theory. That has become clearer now, partly because he has written about his own explanation of his findings and partly because he has extended his research to other classes of responses, including prosocial behaviors.

There is a fourth consideration that figures in our study of the effects of media on children. That is our commitment to the experiment. This commitment is at once our glory and our constraint. We know that experiments are more informative than correlational studies in identifying the sources of effects, in clarifying the direction of relations between events. Most of our recent progress seems to us to have come from the use of experiments in which we isolate one variable from the others with which it is interwoven in ordinary life.

Experiments are well suited to the study of explosions--sudden and dramatic events with predictably sudden effects. But experiments are inefficient for the study of erosion and corrosion. Bandura has shown us that experiments can isolate some effects of watching television, but we must suspect that some of the effects are slow and insidious rather than abrupt and dramatic.

We need to think about how to study insidious effects. If we knew how to do it, we might be farther along in the study of family interaction and family dynamics. We might be better able to specify just what the effects of schooling are on children. We might not face the appalling fact that, despite many investigations, we can't cite evidence as to how and why fathers make a difference in the lives of their children. If we knew ways to design research to study long-term and chronic situations, we might be able to lend a hand to our medical colleagues as they attempt to study the effects of food additives, air pollution, cigarette smoking, high-cholesterol diets, excessive calorie intake, chronic dependence on alcohol or other drugs, habitual inactivity, chemical pollution on the job, etc.

Our medical colleagues have an advantage on us, though, and this leads me to my fifth point about research on the effects of television. We have no animal model. You can set a chimpanzee on a long-term course of imbibing alcohol or smoking cigarettes, and from subsequent observations you can learn something about man's long-term responses to those agents, for the chimpanzee is close to man in his blood composition, immune responses, and so forth. In urging the importance of an animal model for advances in our understanding of child development, I remind you of what happened to our understanding of dependency and attachment as a result of Harry and Margaret Harlow's work with rhesus macaques in the late 1950s and early 1960s. As their findings gradually emerged and took form, suddenly we found ourselves reading Spitz, Ribble, Goldfarb, and Bowlby with new understanding and heightened respect.

Given a problem for which you have a history of research with frequently inconclusive results, for which you have a theory which cannot specify clearly what the observable effects ought to be, in which you have high expenses built into any reasonable effort at research in a field with limited funding and many problems urgently needing investigation, for which you have a commitment to a research design--the experiment--which is limited in its relevance to the issues, and in which, finally, you have no animal model, you might very well decide that the best thing to do is to turn your concern elsewhere, to invest your limited energies in more promising matters. C. P. Snow's remark is pertinent here: "Scientists regard it as a major intellectual virtue to know what not to think about."

The American public and its elected representatives have not permitted psychologists to avoid thinking about television and its effects. Parents and educators are too concerned about possible negative effects for us to be able to turn aside their insistent questions. Recently pediatricians and psychiatrists have come to share those concerns and have reviewed the psychological research of their medical colleagues in ways that have aroused the concern of the medical community. Currently we have an alliance between the American Medical Association and the Parent Teachers Association in efforts to reform commercial television.

Television has developed in our country as a commercial medium, with viewers paying for television sets and for the electricity to keep them running, and with advertisers paying to put programs on the air. The split in costs is roughly 50-50: What the American public spends in a year to buy sets is about matched by what advertisers spend to support broadcasting.

Members of the television industry think of their viewers as buyers. Their nomenclature is revealing. Whereas most of us might refer to the aggregate of television viewers as "the audience," employees of the industry habitually refer to them as "the market." The terminology is from commerce, not theater.

The buyers in the American marketplace are adults, especially the youthful and the middle-aged. It is we adults who purchase cars, select one brand of soap or another at our supermarkets, drink beer, smoke cigarettes, buy clothing. Television advertising, therefore, is beamed at adults, and the programs which occupy the time between commercials are intended to lure the adult viewer to the set. (Adolescents are also affluent spenders in the American marketplace, but it is well known that their preferred media are records, movies shown in theaters or drive-ins, and certain magazines. The adolescent spends less time watching television than do his parents or his younger siblings; he likes to spend his waking hours in the company of his peers, in settings away from his home. So television advertising is only occasionally beamed to the teenager, and Madison Avenue has devised other approaches to persuade him to open his wallet.)

Children are not big spenders; they consume, but they do not purchase. Adults buy most of the clothing children wear, the breakfast foods they gulp down, the cars that transport them to music lessons and baseball games, the gasoline that fuels those cars, the toys children find under the Christmas tree or beside the birthday cake. Children buy their own candy and soft drinks, but for most consumables they rely on adult suppliers.

So American television, the supreme sales medium, is not directed to children. The 8-year-old is not in the center of the thoughts of the television writer or producer, and he never thinks of the 3-year-old at all.

As television viewers, young children are essentially intruders, outsiders, unexpected guests. They are voyeurs of a scene intended for other eyes, eavesdroppers on words meant for other ears.

True, a few television programs are intended primarily for young children. They include shows on what some members of the industry privately refer to as "the Saturday morning ghetto" and a few other shows in the late-afternoon hours on weekdays. But much of the best programing for children appears on noncommercial channels. On commercial television for children, sometimes labeled "kid-vid" in broadcasting circles, the advertising is frequent and unsubtle. It

centers on children's products--toys, breakfast cereals, bread, and peanut butter--and reflects the ad man's hope that the youthful watchers will subsequently badger their parents into buying the advertised brands. Parental testimony indicates this hope is not vain.

Anyone who doubts the effectiveness of television advertising directed to young children might contemplate the fact that \$600 million a year is spent to pay for it. When I hear criticisms of the work of the Surgeon General's Scientific Advisory Committee as "the million dollar mistake," the label used in one industry publication, I recall that figure. The "mistake" of allocating \$1 million dollars for research on television and children was made only once; the expenditure of 600 times that much for ads recurs year after year, and the figure is climbing.

Most of what young children watch on television is programing intended for older viewers, for individuals who are more sophisticated in the ways of the world, more cognizant of the difference between fantasy and reality, more aware of the purposes of advertising. For these older viewers, what is learned on television is balanced against what has been learned from reading, in school, and from life experience. And the content of television is filtered through a more mature nervous system. For the very young viewer, on the other hand, the content of television is so different from anything in his life experience that he has no countervailing sources of information. An illiterate, he cannot turn to books or newspapers for other perspectives on the world. His own intelligence is still developing and very likely it is unequal to the task of assessing and evaluating what he sees on television.

Most social scientists regard the television performance as instruction. They conceive of the child viewer as a pupil, learning from the content of television, and emulating the behavior he sees modeled by the people on TV. Although persons in the television industry think they are purveying entertainment and advertising to the market, social scientists believe it is more heuristic to say the television industry is beaming education over the airwaves to learners.

The contrast is striking between the American public's preoccupation with governing the schooling of the Nation's children and their indifference to governing what these same children learn from commercial television.

American public schools are led by elected local school boards. These mesh with county and State boards of education whose members are public-spirited citizens, either elected or appointed by elected officials. At the Federal level, a cabinet Secretary of Health, Education, and Welfare headed a department which included the Office of Education, the National Institute of Education, etc., until late 1979 when a separate Department of Education was created.

The teachers and administrators of our public schools must meet carefully defined standards of professional competence before they are licensed to teach. Usually they are graduates of publicly supported institutions of higher education. These institutions are also governed by boards ultimately responsible to the electorate. Like the teacher, the curricular materials (textbooks, films, etc.) must pass careful review by committees before they may be revealed to the eyes of our impressionable youth.

Despite all their opportunities to influence their local schools, parents may feel that the public schools do not meet their children's needs. Such parents have several options: move to another school district, enroll their children in a parochial school, enroll their children in a private secular school, or stay with the local schools and continue to work to change them.

If television is a form of education for children, as behavioral scientists believe, then we must ask how the governance of television compares with the governance of schools.

How may a citizen proceed to elect, reelect, or recall the persons who manage television? What power does the elected governor or State legislature have over what is taught by television in their State? What are the Federal regulatory agencies and how effective are they? Who is the relevant cabinet officer? To what local or national officials may parents complain when they are dissatisfied with what television is teaching their children?

What credentials of professional competence must a television performer secure from a public licensing agency before he appears before the Nation's young people as a mentor and model? What educational achievement does the public require of television performers? Who are the public-spirited citizens who review the contents of the television curriculum?

Finally, what are the options facing parents who are dissatisfied with the television offered in their community? Will moving to another district alter the programming available to their children? What are the television equivalents of the parochial school or the private school?

It may be argued that television is regulated by its public through the commercial marketplace. Commercial programs are sponsored by advertisers, and the effectiveness of advertising is measured by volume of purchases of the products. This is an extremely indirect form of regulation and, for that reason, probably quite inefficient--especially in the short run. There are links between a product's sales figures, the advertisements

for that product, and the shows supported by those advertisements, but those links constitute only a lengthy, slack, loose, and inefficient feedback loop. I advocate use of that feedback loop by consumers to protest sponsorship of objectionable television programs, but I have no illusions that the feedback loop matches the ballot box in directness and effectiveness.

In sum, there is no effective governance mechanism through which the public may express its opinion of the television industry's use of the public airwaves, either at the local, State, or Federal levels. Nor is there a way to educate or to certify the television teacher. The market mechanism is highly indirect, involving many loosely articulated intermediate steps.

In regulating the professions serving children, we do not rely solely on the effectiveness of school boards, licensing agencies, professional schools, accreditation procedures, and the like. We also rely on the effectiveness of the direct interaction between provider and user, between doctor and patient, between teacher and pupil, between social worker and client. Professional persons serving children are involved in endless face-to-face encounters with children.

When a physician treats a child's fever, he does not need to be told by the child or the parents whether the treatment is effective. The physician can read the thermometer or can touch the child's skin.

When a nurse cares for a sick child in a hospital, she does not need to be told by the child or the parents whether her ministrations are helpful. The nurse can judge for herself whether the child is sleeping more soundly, whether facial expression is less pained, whether pallor has vanished, and whether appetite has returned.

When teachers assist young children in discovering how to read, they do not need to be told by the children or their parents that "Johnny can read," in order to be able to evaluate their instructional effectiveness. They can observe the children's classroom behavior, can listen to them read aloud, can observe whether the children are taking books off the shelf and going through them, etc.

When trying to assist a dependent child through various interventions, such as bringing a homemaker into the household, locating nursing care for a sick parent, consoling the parent, teaching the parent to be more effective in interactions with the child, etc., social workers do not need to be told by the children or their parents whether their interventions have helped. The social worker can see whether the children's

school attendance has become more regular, whether the children seem to be more at ease with themselves and their peers, whether the atmosphere of the home has become more calm and less chaotic, etc.

In each of the cases I have cited, professionals concerned with helping children have direct sources of evidence as to the effectiveness of their efforts to help. There is direct feedback to the professionals.

The same sort of feedback assists performers and producers in the theater. Producers can sit in the audience for their shows and observe the audience's responses. Performer can hear the laughter, the gasps, the rapt stillness of an absorbed audience. Symphony conductors gain from the same sort of audience feedback, as do opera singers and any other performers whose work brings them into direct face-to-face contact with the "consumers" of their work.

The television performer and producer do not have the benefit of that feedback. They do not observe the effects of their interventions and ministrations. They do not see the facial expressions of the children who observe their shows. If they cause sleepless nights to those children, they never hear about it.

Whereas the communication loop between professional and child is a two-way linkup, as is the loop between theater performer and theater audience, there is only a one-way linkup between the television performer and the child viewer. There is no feedback from the child to the performer or producer, except the extremely indirect information in the Nielsen ratings. These ratings tell only who was in the audience for a particular television performance; the audience is described in terms of age, sex, and geographical location. There is no information about the audience's responses to the performance. And the Nielsen ratings are seen long after the show was produced, not at the time when the production decisions are being made and the performance being executed.

It would be instructive to see what might result if every television producer and performer were required to study three or five different videotapes of home audiences watching each of their shows. The same requirement could be levied on writers. Providing feedback of this sort to workers in the television industry would put them in a position more comparable to that occupied by the helping professionals.

We know that doctors can rationalize that their treatments are less painful and more efficacious than in fact they are. We know that teachers can maintain their own morale by believing they are more effective instructors than in fact they are. But the mere fact that professional

people need to rationalize about their own effectiveness is testimony to the importance they place on the feedback they receive concerning their work. We cannot fault the television writers or producers for failing to attend to the child audience, when in fact they have no opportunity to do so.

In my conversations with television writers and producers, I have been struck by the fact that they know nothing about the response of the child audience to their work, other than what they know about their own children's responses. Child psychologists have learned that parents are not the most objective observers and interpreters of their children's behavior. We have learned that some parents can benefit from observing other people's children, from getting information about children which is not colored by their own deep and abiding relations with their own offspring. Very likely, television writers, performers, and producers could benefit from this opportunity, in order to augment the information they gain from watching their own children viewing television.

There is not a political-governmental mechanism to work toward assuring that commercial television reflects the public interest, including the well-being of the young, nor an education-certification-professional system to select and educate television producers and performers, engaging their allegiance to goals linked to the public interest, nor an effective commercial marketplace in which the public can exert its influence as consumers of television entertainment, nor an effective communications feedback loop between producer/consumer and watcher. For all of these reasons, research on television's effects becomes critical.

Systematic research is yet another approach to informing the producer and dispenser of a product concerning that product's short-term and long-term effects.

The ethical drug industry provides an example of the utilization of research by a profitmaking industry to protect the consumer. Physicians' direct observations are not sufficient to identify all the effects of a medication, partly because physicians cannot keep their patients under continuous surveillance and partly because all drug effects are not evident to the observer nor apparent in every patient. For this reason, ethical drug manufacturers invest in research on the therapeutic and other effects of the drugs they sell, and they employ a scientific staff to monitor research that may be conducted elsewhere, including research at medical schools, clinics, etc. The Federal Government also plays a direct role in evaluating research on drug effects, through the Food and Drug Administration (FDA).

Agriculture provides another example of private enterprise in an effective interaction with research scientists. The interaction centers in the schools of agriculture in the land grant colleges of the Nation. These colleges have a long history of generating useful information about the effectiveness of various approaches to growing foodstuffs. The fact that 5 percent of our Nation's workforce is able to produce excellent food for our entire population is a tribute to the work of horticulturists, soil specialists, agricultural geneticists, food economists, nutritionists, specialists in animal husbandry, and other scientists in the land grant colleges and in the U.S. Department of Agriculture (USDA). It speaks well for the good judgment of American farmers and the owners of factories in the fields in relying on agricultural extension agents and others associated with the research enterprise. And it is a tribute to the educational effectiveness of the schools of agriculture in each State. The lesson of the alliance between applied science and agriculture which has been an American success story of the 20th century has not been lost on other nations whose leaders seek consultations with schools of agriculture faculty members as they strive to upgrade their own food production.

Examples of an alliance between research investigators and persons serving the public are more common in the professions than in business.

Thus, educators attempt to use research to assess the effectiveness of various forms of schooling and to evaluate the interactions between pupil characteristics and teaching efforts. Educational research is conducted primarily in university professional schools of education, but also in public and private school systems and in nonprofit research organizations. No responsible educator would claim that his/her profession is guided primarily by scientific knowledge, but neither would any informed observer deny that research findings have had major impacts on schooling in the United States. They inform selection procedures, counseling efforts, instructional approaches, the organization of school administration, etc.

The medical profession maintains its own research effort separate from that of the drug industry. This effort is housed in medical schools, and it extends the intellectual grasp of physicians far beyond what they could achieve from observing their own patients and assessing their own treatments. Medical research describes the natural history of patients with various diseases, assesses the effectiveness of different interventions, including surgery and medications, and studies the fundamentals of the genetic and biochemical influences which shape physiology and behavior. Increasingly, medical research is attending to the psychological and social aspects of the human person and also

extending its study of genetic, biochemical, and physiological aspects to include those features of a person's habitual mode of living which make him susceptible or resistant to stress and disease.

Engineering as a profession gives us another example of the interaction between research and practice. Many industrial firms conduct engineering research, including most of those which have experienced rapid growth in recent decades. Their work complements and extends the research done by faculty in engineering schools and by pertinent government agencies, including the Armed Forces.

Through professional journals and postgraduate education, the practising physician and the working engineer are kept current on the research being conducted in the professional schools and on its implications for their day-to-day work in the field.

It is a patent oversimplification to say that engineering is applied physics and chemistry, medicine is applied biology, and education is applied psychology, but such oversimplification does highlight the relation between the professions and the sciences. Modern professions in America rest on a scientific base of research and investigation, which informs and sometimes transforms their practice. The requirements for the preprofessional education of these specialists reflect the importance of this base. The would-be physician takes premedical courses in biology, chemistry, and zoology, while the aspiring engineer takes courses in physics and chemistry as well as technology.

When we examine the communications industry, we are struck by the lack of any comparable interface with research. The professional schools of journalism and communications at many universities have not yet achieved the solidity, stability, and breadth of the medical schools, law schools, engineering schools, or agricultural schools. They are not as yet secure in their ability to attract high quality faculty and excellent students. Typically, they are housed less adequately, and their research effort is more truncated.

Research on the effects of mass communications on our national life is conducted not only by faculty members in such schools, but also by psychologists, sociologists, educators, economists, child development specialists, and others. Indeed, just as much of the best research on education and behavioral aspects of health and disease so has much of the best research on the mass media been conducted by faculty members in departments of psychology. This research is published in a diversity of scholarly journals, only a few of which have terms such as "communications" or "media" in their titles.

Some of the research has been financed by the National Institute of Mental Health (NIMH) and some by private foundations. To my knowledge, there is at present no government agency whose supporting role in communications research parallels the role of the U.S. Department of Agriculture (USDA) in agricultural research; the role of the National Institute of Education (NIE) in educational research; or the role of the National Institutes of Health (NIH) and the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) in biomedical and behavioral research.

Anyone concerned with the effects of the media of communications on our national life and on the Nation's children must be urged to support efforts to strengthen the professional schools of communication and to underwrite scholarly research on the media's effects. These are two high priority items on the agenda of media reforms.

Do media practitioners know about the results of research in their field? In my experience, the answer is flatly "no." At most, they read secondary or tertiary sources. In this, they are like educators who are less likely to read reports of original research than they are to read scholarly overviews of research, often in textbooks. The same holds true for physicians who rarely read primary reports of research but instead rely on textbooks and scholarly reviews.

Where the media people differ from the educators and the physicians is in their reliance on patently unreliable secondary sources, namely trade journals and popular publications, such as TV Guide. The educators and the physicians look to highly respected and established scholars to write their texts and scholarly reviews. The media people depend on unschooled and biased employees of their own industry. Before textbooks and scholarly reviews are published, typically they are reviewed by other scholars for bias and selectivity. There is no scholarly review of the sources written for media people. Indeed, typically they are written and published in great haste, with no time for any review.

I have met people in the media who have discussed George Gerbner's methods and findings. So far as I was able tactfully to ascertain, none had ever read any of Professor Gerbner's writings. What they had read, and appeared to believe, were pieces commissioned by industry. These reportorial pieces are more often hatchet jobs than even-handed reporting.

The same holds for industry employees with whom I have discussed Albert Bandura's findings. None has ever heard of the Journal of Personality and Social Psychology, Child Development, The American Psychologist.

or other scholarly journals in which Professor Bandura has published his research results. Nor are they familiar with his books, the scholarly reviews of his work by other psychologists, or the descriptions of his work which now appear in most introductory textbooks of psychology and child development. The average college sophomore in an introductory psychology course knows more about Bandura's work than the average television producer or performer. What the media people have read are pieces of fluff in popular magazines and trade publications. Usually these are written by reporters who specialize in "show biz," not in science reporting. Whereas the educators in the schools rely on a professor of scholarly repute to evaluate research for them, the media men rely on a PR specialist or show biz reporter of uncertain education with no scholarly reputation or evident qualifications to read and interpret research findings.

Here we have another instance of a slack and sloppy feedback loop. There is now a considerable body of research about how television affects youngsters. Every national meeting of the American Psychological Association and of the Society for Research in Child Development, the two organizations with which I am most familiar, devotes scholarly sessions to this topic, and no doubt other scholarly organizations do also. The research appears in a number of journals and is discussed in introductory textbooks on psychology and child development. The research is not well known to people in the television industry.

The major networks may maintain small staffs to conduct and monitor social research, and, in my experience, the persons on these staffs do know about the pertinent research, do attend national professional meetings, etc. But the information does not reach the practitioners.

It is easy to note the defensiveness of the television industry and its hostility to criticism. The reason undoubtedly lies partly in the industry's dedication to maximizing profits, often to the neglect of other social goals. This dedication pays off. Profits increase regularly. Network revenues rose about 20 percent in 1977 and had exceeded that rate of growth in 1976. Predictions are that there will be another increase of 10 to 15 percent in 1978, according to a New York Times article (February 12, 1978) entitled "The networks are weeping all the way to the bank." Network sales were \$3.3 billion in 1977, with earnings estimated at \$400 million.

There is also the fact that television personnel have no education in interpreting research. In a university, we attempt to educate teachers and physicians to be research consumers, making them aware of the implications of research for their practice and teaching them some of the standards by which individual studies and arrays of studies are evaluated. There is no such education in the lives of television employees.

My belief is that high priority should be given to efforts to educate those currently working in the television industry about the effects of television on children and adolescents. It is not sufficient to send reprints of the relevant research to the network's office of social science research. Instead, an effort is needed to educate not only the personnel of such offices but also the persons who are working "on the firing line" of the industry: writers, producers, and performers.

The efforts of the Project on Human Sexual Development provide a model. The project's director has succeeded in bringing industry people into discussions with academic people in an environment in which neither group feels needlessly challenged or unnecessarily defensive. The topic of that project, sexual development as it may be influenced by education and the media, is one on which less is known than on aggressive behavior. Research on the topic is about where research on television violence was in 1960, before the publication of Bandura's investigations. The hope is that by establishing lines of communication to the television industry early in the research effort, one can create feedback loops by which the results of the forthcoming research will be known to the industry and useful to its members in future programming. Further, one may hope that members of the industry will participate in the formulation of research goals and methods.

A somewhat similar effort, although on a smaller scale, was undertaken by the Ford Foundation at Reston in 1975. Television researchers were brought together with Government officials with a regulatory responsibility in the domain of television advertising. Discussions were launched on the research needs which had been identified within the regulatory agencies--the Federal Communications Commission (FCC) and the Federal Trade Commission (FTC)--as well as the research needs perceived by investigators at the universities.

When we recognize the level of knowledge about research which currently characterizes the public and the members of the industry, we can recognize that our present publishing approaches are insufficient. Currently we rely on primary publication of research plus occasional

overviews of research, such as those appearing in the SRCD's Reviews of Child Development Research, including the excellent review of "The Impact of Television on Children and Youth" published in that series by Stein and Friedrich in 1975. The fate of that review illustrates my thesis. It has been widely used by medical professionals and educators who are concerned with television's impact. For example, I saw it distributed by the American Medical Association to all physicians who attended a 1-day conference in Chicago in October 1977 concerning television and children. Many of the medical educators in attendance spoke out in praise of the review, which had previously been unfamiliar to them. But I have not yet met anyone in the television industry, other than the social scientists in their research offices, who was aware of the review's existence.

Primary research reports are read mostly by other investigators in the same field of research, who generally number in the hundreds. They may attain a wider readership if they are reprinted, as many of Bandura's papers have been, in collections of readings sold to students to augment their textbooks. Review articles probably attain a wider readership and are often instrumental in delineating the current "state of the art" and identifying problems currently ready for empirical investigation. I have noticed that once an authoritative review paper appears, students and others rarely cite the primary literature that antedated the review but, instead, cite the review and subsequent primary papers.

At the next level of generality and wide readership are textbooks, whose authors increasingly rely on research reviews as their source material. In my own field, child development, any reader of textbooks published in the 1970s must be impressed with the impact of the 1970 revision of Carmichael's Handbook which Mussen edited in 1970, as well as the impact of the chapters in the SRCD Review volumes which appeared in 1964, 1966, 1973, with two volumes in 1975. Our textbooks improved notably in scholarship as these authoritative reviews became available to their writers.

When writers for the public seek to document their assertions, they generally cite textbooks. This is one reason that popular writing is so commonly out of date by the time it appears. An exception is the one popular book on television which has a scholarly basis, The Early Window, (Liebert, et al. 1973), based directly on the research sponsored by the Surgeon General's Committee as well as on earlier research. I notice, however, that this book is quoted less frequently by lay people than are other popular books on television whose roots in research are shallower.

My analysis of the current situation in television broadcasting in the United States, in which television is a commercial enterprise using the public airwaves to sell commercial products to adults and in which children are in the position of intruders and voyeurs, leads me to several recommendations:

1. Increased support is needed for the development of excellent schools of communication at universities, in which personnel for the communication industry may be educated and in which research on the media may be centered. Such schools should be broadly interdisciplinary, as are our best professional schools in medicine, law, engineering, education, and business.
2. Consumers should be educated to use the presently imperfect feedback loop by which they may convey their approval or disapproval of television programming by buying or boycotting the products advertised on those programs. Doing this requires that consumers know which companies market which products and know how to communicate with those companies. Nicholas Johnson's organization, the Parent Teachers Association, and other groups have undertaken to disseminate this information widely.
3. New techniques of information dissemination need to be devised to communicate the results of research to the television industry. Journal publication has proven not to be sufficient, nor are review articles doing the job. Conferences, seminars, and the like may be more efficient. The Project on Human Sexual Development and the American Medical Association are undertaking efforts along this line.
4. The television industry would be well advised to develop an inhouse research capability which draws on the current level of sophistication in the behavioral sciences. To my knowledge, the current research staffs are small and represent primarily the disciplines of sociology and social psychology. In no way does the research capability of the broadcast industry match the sophistication and scope of the research capability of the drug industry, the Nation's agricultural effort, high technology industries, etc. The staffs of inhouse research groups could not only interface with the university research community, but they could also participate in efforts to educate the production and creative staffs concerning research findings pertinent to their work.

5. Show biz reporters provide a weak link between the research community and the public. Science writers who can report the results of research on television and its effects on children and adolescents need to be educated. The efforts of the Division on Developmental Psychology of the American Psychological Association, under the chairmanship of Dr. Marian Radke-Yarrow, are directly pertinent here. Dr. Radke-Yarrow and her committee are investigating ways to strengthen the links between developmental psychologists and science writers in order to enhance the quality of the research reports these writers transmit to the reading public in the United States.

I offer these recommendations to augment those I made in 1972 as a followup to the work of the Surgeon General's Scientific Advisory Committee on Television and Social Behavior on which I served in 1969-1971. When Senator Pastore asked committee members for recommendations based on that effort, I offered several, and I hope I shall not try the reader's patience if I conclude this report by repeating them here. Before presenting them I must comment briefly on some features of our report to the Surgeon General which have been widely misunderstood.

The substance of our report, based on a careful review of the 23 studies commissioned by our program and also of previous research, was that there is now evidence for a causal link between watching television violence and subsequent aggressive behavior by the viewer. Such a causal link has long been suspected or presumed by well-informed social scientists, by concerned parents, and by many other thoughtful observers. The evidence for it comes both from experimental studies in social scientific laboratories and from field surveys in natural situations.

There is no reason to believe that television watching is the principal cause of violent behavior by adolescents and adults. The causes of aggression are many and they include both biological and cultural sources. In childhood, perhaps the single most important source of later aggressiveness is gross parental neglect and abuse. The child of a harshly punitive parent is very likely to become a punitive adult in later life, and the victim of child neglect is likely to become a neglectful and abusive parent. In adolescence and young adulthood, incarceration in our prisons is undoubtedly one of the major sources of later aggressiveness--our jails and prisons as they presently operate are schools for crime. Those who seek the single most effective steps that might be taken in our society to reduce violence must be advised to consider strenuous interventions to aid abused children and sweeping reform of our local, State, and Federal systems of incarceration of charged and convicted criminals.

Commercial television makes its own contribution to the set of factors that underlies aggressiveness in our society. It does so in entertainment through ceaseless repetition of the message that conflict may be resolved by aggression; that violence is a way of solving problems. In television entertainment, children may observe countless acts of murder and mayhem, may learn through observation how to perform these acts, and may learn that such acts are admired by other people. Thus commercial television is itself a school for violence. American children are attending this school as many hours a year as they attend the schools sponsored by their local school boards.

Research has shown that not all children are equally vulnerable to the negative influences of television watching. Indeed, it is a minority of all children who display these influences in their later behavior. My own guess is that television violence has negative effects on all child viewers, but that countervailing forces overcome these effects in the majority. In the minority, the positive influences in their lives are not sufficient to counteract the baneful effects of hours of watching aggressive modes in their own lives. When we talk about a minority of American children, it is important to remember that we are talking about millions of children. It is important also to remember that most negative influences in our society have overt effects on only a minority. For example, only a minority of young adults use heroin, yet no one doubts that it is a very serious social problem. Only a tiny minority of American children ever contracted polio, yet our society strove energetically to eliminate that disease. The minority of American children who display the effects of too much violence on television is surely a much larger group numerically than either the heroin users or the polio victims; they need our concern.

Who are the children who are most affected by watching violence on television? They are the very children who have been predisposed to be aggressive by other influences in their lives. In other words, they are the least capable of interpreting and resisting the antisocial influence of television violence, because they have the poorest defenses against it. The fact that they are already predisposed to be aggressive should make us especially cautious about any additional negative influences in their lives and should hardly make us complacent that it is their "predisposition" which enables vicarious violence to becloud these children's lives further.

Self-regulation within the television industry has not worked. Since the late 1940s there have been calls to the television industry for self-regulation--from Senate committees, from concerned parents, from mental health professionals, from the National Commission on the Causes and Prevention of Violence. Despite pious promises, there has been no action sufficient to cleanse television of this stain. The incidence of violent actions in entertainment programs has not changed notably in the last 5 years; it remains at a brutally high level.

What alternatives to self-regulation deserve the consideration of your subcommittee? I have several suggestions.

First, I suggest that we need an independent monitoring agency to provide regular reports on the level of violence in television entertainment. This agency could issue periodic "smog bulletins," alerting the public to the level of violent pollution currently being emitted by their television receivers. I suggest that this agency might be privately financed by one of the foundations and that reports should be issued at least monthly. These reports should be broadcast over television and radio and printed in newspapers and magazines and should indicate how much violence is occurring, which networks and stations are broadcasting it, the times it is being broadcast, and how many child viewers are estimated to be watching at those times. They should also indicate who the sponsors are for the violent shows. This suggestion has been advanced by my colleague, Professor Albert Bandura of Stanford University, who believes that it would be helpful if the public and those within the industry were aided in identifying the violence vendors.

Second, I suggest that consumers convey their disapproval of violence vendors in two ways. We may refuse to purchase their products. And we may refuse to buy stock in their firms. The purpose of commercial television is to sell products. If consumers boycott products that are advertised on programs glorifying aggression and teaching techniques of mayhem and massacre, perhaps the producers of these products will turn their energies to finding other techniques of attracting customers. Many investors today are guided in their investing by social concerns. Churches, universities, foundations, union pension plans, and others are seeking to invest their funds in ways that benefit society. If these groups know who the violence vendors are, they may withdraw investment funds from their firms and instead invest their funds in those manufacturers who sponsor wholesome entertainment for the next generation.

A third suggestion derives from my observation that television producers are mimics. When one format succeeds 1 month, it is being widely imitated by other producers 6 months later. Thus, we have "fads" in television programing, with the doctor shows proliferating one season and private eye shows another. When successful new formats of nonviolent entertainment are devised, they will be copied. I recommend increased support for public television because I believe that the craftsmen in public television are likely to turn their energies and talents to creating constructive programs for children. As these attract children to their audience, they will be imitated by other producers, and a chain of change will have been forged.

It is the imitative capabilities of television producers that prompt my fourth suggestion as well. All of us who have traveled abroad have observed that programing for children is more successful in other nations than it is in the United States. Our record is unmatched in the neglect we display to our child audiences. I recommend that travel fellowships be offered to the writers and producers of children's television programs so they may observe firsthand how other nations--Canada, England, the European countries, Israel, etc.--have succeeded in attracting child audiences without saturating them with violence. These fellowships might be funded by the television industry itself, and funds might also be available on a matching basis from private foundations for this purpose.

Fifth, I believe the Federal Communications Commission (FCC) could be more effective in obtaining fair treatment for children and adolescents. I suggest that a child advocate be appointed to the staff of the FCC. This individual should have frequent and direct communications with the commissioners, advising them on questions bearing on the welfare of children. He or she should be well acquainted with social scientific research and also in close communication with the professions serving children: education, social service, child psychology, pediatrics, child psychiatry, etc. In the work of the FCC, the child advocate should be alert to decisions that have implications for the child audience and should take initiatives in recommending changes in policies and procedures that would benefit children. The child advocate could testify from time to time on the progress achieved in working with the commissioners for the welfare of all the children in our land.

REFERENCES AND SUGGESTED READINGS

- Anderson, K., and Dennis, N. Television and Children: Priorities for Research. Report of a Conference at Reston, Virginia, Nov. 5-7, 1975. New York: Ford Foundation, 1975.
- Baldwin, A.L. Behavior and Development in Childhood. New York: Dryden, 1955.
- Bandura, A. Principles of Behavior Modification. New York: Holt, Rinehart, and Winston, 1969.
- Bandura, A. Aggression: A Social Learning Analysis. Englewood Cliffs: Prentice-Hall, 1973.
- Bandura, A.; Ross, D.; and Ross, S.A. Transmission of aggression through imitation of aggressive models. Journal of Abnormal and Social Psychology, 63:575-582, 1961.
- Bandura, A.; Ross, D.; and Ross, S.A. Imitation of film-mediated aggressive models. Journal of Abnormal and Social Psychology, 66:3-11, 1963.
- Berkowitz, L. Control of aggression. In: Caldwell, B.M., and Ricciutti, H.N., eds. Review of Child Development Research. Vol. III. Chicago: University of Chicago Press, 1973. pp. 95-140.
- Bowlby, J. Maternal Care and Mental Health. New York: World Health Organization, 1951.
- Cater, D., and Strickland, S. TV Violence and the Child: The Evolution and Fate of the Surgeon General's Report. New York: Russell Sage Foundation, 1975.
- Dollard, J.; Doob, L.W.; Miller, N.E.; Mower, O.H.; and Sears, R.R. Frustration and Aggression. New Haven, Conn.: Yale University Press, 1939.
- Flavell, J.H. The Developmental Psychology of Jean Piaget. New York: Van Nostrand, 1963.
- Goldfarb, W. Infant rearing and problem behavior. American Journal of Orthopsychiatry, 13:249-265, 1943.

- Hunt, J. McV. Intelligence and Experience. New York: Ronald, 1961.
- Lesser, R.M.; Neale, J.M.; and Davidson, E.S. The Early Window: Effects of Television on Children and Youth. New York: Pergamon, 1973.
- Martin, W.E. Rediscovering the mind of the child: A significant trend in research in child development. Merrill-Palmer Quarterly, 6:67-76, 1960.
- Melody, W. Children's Television: The Economics of Exploitation. New Haven: Yale University Press, 1973.
- Public Health Service. Television and Growing Up: The Impact of Televised Violence. Report to the Surgeon General from the Surgeon General's Scientific Advisory Committee on Television and Social Behavior. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Ribble, M.A. The Rights of Infants. New York: Columbia University Press, 1943.
- Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior. Vols. I-V. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Siegel, A.E. The influence of violence in the mass media upon children's role expectations. Child Development, 29:35-56, 1958.
- Siegel, A.E. Review of Television and the Child by Himmelweit, H.T.; Oppenheim, A.N.; and Vince, P., 1958. In: Public Opinion Quarterly, 590-592, 1960.
- Siegel, A.E. Mass media violence: Effects on children. Stanford M.D., 8(2):11-14, 1969a.
- Siegel, A.E. The effects of media violence on social learning. In: Baker, R.K., and Ball, S.J., eds. Violence and the Media. Staff reports to the National Commission on the Causes and Prevention of Violence. Vol. IX. Washington, D.C.: Supt. of Docs. U.S. Govt. Print. Off., 1969b.
- Siegel, A.E. Violence and Aggression. In: Wertheimer, M., ed. Confrontation: Psychology and the Problems of Today. New York: Scott Foresman, 1970a. pp. 155-199.

- Siegel, A.E. Violence in the mass media. In: Daniels, D.N., eds. Violence and the Struggle for Existence. New York: Little, Brown, 1970b. pp. 193-239.
- Siegel, A.E. Testimony. In: Report of the subcommittee on communications of the committee on commerce of the United States Senate of the Ninety-Second Congress. Serial Number 92-52: 62-64, 1972.
- Siegel, A.E. Educating females and males to be alive and well in century Twenty-One. In: Wittrock, M.C., Changing Education. Engelwood Cliffs: Prentice-Hall, 1973a. pp. 155-168.
- Siegel, A.E. In: The Early Window, by Liebert, R.M., Neale, J.M., and Davidson, E.S. New York: Pergamon Press, 1973b. pp. ix-xiii.
- Siegel, A.E. Ways of "Knowing." Phi Beta Kappa address presented at Stanford University, June 15, 1973c.
- Siegel, A.E. Can we await a consensus?: A review of Feshbach S., and Singer, R.D. Television and Aggression (1971). Contemporary Psychology, 18:60-61, 1973.
- Siegel, A.E. The great brain robbery. Johns Hopkins Magazine, 25(2):19-23, 1974a.
- Siegel, A.E. Televised violence: Recent research on its effects. In: Frazier, S.H., ed. Aggression. Williams & Wilkins, 1974b. pp. 271-286.
- Siegel, A.E. Communicating with the next generation. Journal of Communication, 25:14-24, 1975. This is based on the Presidential Address to the Division on Developmental Psychology of the American Psychological Association, New Orleans, September 1974c.
- Siegel, A.E. A Nation of Vidkids. The National Elementary Principal, 55(3):54-59, 1977.
- Siegel, A.E., and Price, F. Skeptic conversation: Alberta Siegel vs Frank Price. Skeptic, 22:22 ff., 1977.
- Stevenson, H.W. Television and the behavior of preschool children. In: Murray, J.P.; Rubinstein, E.A.; and Comstock, G.A., eds. Television and Social Behavior, Vol. III. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Stein, A.H., and Friedrich, L.K. The impact of television on children and youth. In: Hetherington, E.M., ed. Review of Child Development Research. Vol. V. Chicago: University of Chicago Press, 1975. pp. 183-256.

Chapter 3. INTERPERSONAL FACTORS MEDIATING VIEWING AND EFFECTS

Aimee Dorr, Ph.D.

Television viewing is an integral part of the fabric of life for most American youth. Except for sleeping, the purely mythical "average youth" gives more time to television than to any other single activity. For some adults this leads to the fear that television must be an overwhelmingly important influence. Time invested is equated with effects received. There is fear, not exultation, because television viewing is not a highly valued skill or avocation in our society and because much of what is seen on television is not considered highly desirable. Yet all our research to date, while demonstrating that television can and sometimes does influence our youth, does not suggest that television exerts an unusually powerful influence on most viewers.

In some respects, such findings may be attributed to the ways in which we can investigate television's effects, rather than to the "true effect" of television on our society. That is, television's effects must be explored using people who watch television, who interact with other television viewers, and whose life space is permeated with derivatives of television's culture. How much of an effect (of either viewing or content) can we expect to find if everyone we study has in one way or another been thoroughly exposed to the medium and its messages? There is no way for us sensibly to study television and American youth without these limitations. We must operate within the context of our society, and in our society television (or some similar mass medium) is here to stay. Thus, we will never be able to know the full extent of television's effects. Rather we must content ourselves with knowledge of the effects of existing variations in viewing patterns on the development of our youth and of the ways in which television interacts with the other threads that go together to make up the fabric of youths' lives.

A metaphor about threads interwoven to form a fabric is corny and not too inaccurate. Commonsense and our own research data indicate that there are multiple influences on youth as they develop--indeed on adults as well--and that for most of us any one influence is not the sole determinant of what we are or what we become. Our species probably would not even exist if this were the case. Within this framework it becomes sensible to ask about the ways in which television experiences interact with other experiences. This paper attempts to do just that.

My focus here is on interpersonal influences on viewing and effects. I review what evidence there is on the roles of parents, peers, siblings, teachers, and unfamiliar adults vis-a-vis a youth's

experiences with television. This includes the ways in which such people influence viewing patterns, the ways in which they influence learning and performance of television content, and their relative potency in mediating the effects of time spent viewing and of content seen while viewing. In most cases I have limited my comments to those which can be based on existing research. This is a serious limitation, as it means that some very reasonable issues cannot be addressed. But it is no good pretending we know something when we haven't even yet tried to find out about it.

A few other comments about the paper are in order. The reader will note that a number of potentially relevant studies which were conducted outside the United States, notably those from England, Japan, and Scandinavia, were omitted. This was done because I believed that either or both their social structure and their television programming might be sufficiently different from that in the United States that the findings would not generalize to our situation. I have also used only those studies which were conducted on "normal" American youth because I did not feel the paper could adequately handle additional populations of viewers and because Eli Rubinstein was preparing a paper for NIMH on television and children who are institutionalized or who have special needs. With all these choices made clear, let us proceed to examine interpersonal influences on television viewing and its effects, with an eye to determining what we know, what we still need to find out, and what these mean for action.

INTERPERSONAL INFLUENCES ON VIEWING PATTERNS

Children's viewing patterns are of concern to us in terms of both how much they watch and what they watch. How much they watch may be related to how well they do in school, in social interactions, and in sports and hobbies by virtue of the amount of time given to watching television rather than to developing the skills required by these other activities. What they watch is related to the kinds of information, attitudes, and behaviors they learn and perhaps perform by virtue of what they actually see when viewing. I do not review here the extensive literature on how much television and which types of programs children watch. The data are summarized elsewhere (e.g., Adler et al. 1977; Liebert et al. 1973; Lyle 1972; Stein and Friedrich 1975) and are not particularly germane to the focus of this paper. Instead, I want to review available data on family and peer influences on viewing amounts and content preferences. The data break down most easily into considerations of the relationships between viewing partners and content, parental viewing patterns and amount and content, family communication patterns and amount and content, parental rules and amount and content, and the quantity and quality of social interactions and amount.

Prior to reviewing what we know and don't know about interpersonal influences on children's viewing patterns, we must emphasize that all the data in this area are correlational. Because of this, it is impossible to determine causal processes. While most, if not all, of the studies at least implicitly assume that the causal pattern is from parents, family, siblings, or peers to the child viewer, there are no data which allow us to make such inferences. In writing about these studies I have tried to state findings as relationships rather than causations, but if I failed to do this at any point (due undoubtedly to my own assumptions), the reader should mentally correct my failing.

Viewing Partners

There is only very incomplete information on the influence of viewing partners on program choices, although it is usually assumed that a good many viewing decisions must be made jointly with others. Indeed, parents report that sibling arguments about what to watch are extremely frequent and irritating (Yankelovich and White 1977). The little evidence we have on choices with siblings comes from Lyle and Hoffman (1972a). Only about 3 percent of the first graders they interviewed reported that their siblings usually determined what the first graders watched. Nine percent reported that their parents chose the program. When children were separated by ethnicity, the figures for parents choosing programs were 9 percent for whites, 8 percent for Chicanos, and 18 percent for blacks. These data are for all viewing done by first graders. Different figures arise when data are for those times when mothers and children (of unspecified age) view together. In this situation, it is reported that the mother chooses the program 37 percent of the time, the child 33 percent, and the two jointly choose 27 percent of the time (Bower 1973). In a different vein, Chaffee and Tims (1976) found that junior and senior high school students reported they viewed more violent programs when they watched with their parents and more comedy when they viewed with younger siblings. These data together suggest that viewing partners will influence program choices, but they are utterly insufficient to indicate how much this occurs for children of different ages, ethnicities, and social classes and what the nature of the influence is likely to be for different types of children. Better information on this topic will become available only if more research is carried out, but I do not feel that it is a particularly useful avenue to pursue.

Parents as Models

As in many areas of socialization, it has been assumed that parents influence the television viewing of children through their own behaviors. What evidence we have in this area--and it is not much--does suggest that this may be true, at least for younger children. In

what is now a classic study of children and television, Schramm found that children whose parents watched less television were likely to watch less themselves. Similarly, children whose parents watched more educational television were likely to watch more themselves (Schramm et al. 1961). A similar finding was reported by Lyle and Hoffman (1972a) for amount of viewing, although it should be noted that the effect was less strong for the oldest students (10th graders). Chaffee and McLeod (1972), although concluding that their data generally did not support the idea that parents were effective models of television viewing behavior, also report modest relationships between parental viewing and viewing by their 7th and 10th grade children. These data are consistent in indicating that parents, by example, do somewhat influence their children's viewing patterns, but that such influence is small and probably decreases as children mature. It is certainly enough for one to suggest to parents that their behavior may be an influential example for their children, but it is not enough to suggest that children would become significantly "better" viewers if parents would only "clean up their own act."

Family Communication Patterns

Largely under the impetus and direction of Steven Chaffee and Jack McLeod at Wisconsin, there has been a series of studies of the relationships between family communication patterns and children's television viewing. Family communication patterns have been conceived as varying on two dimensions, emphasis on social conformity and emphasis on self-expression. Within the four resultant possible combinations (consensual, laissez faire, pluralistic, and protective), they have hypothesized different patterns of viewing by children and different relationships between parental practices and children's viewing. Personally, I have repeatedly found it difficult to parcel out and evaluate relationships reported in these studies. The number of relationships examined is usually large, the relationships are usually weak, and some of the published articles are acknowledged searches for relationships which could then be sensibly explained and perhaps retested another time. Moreover, there are times when alternative explanations based on parents' actual use of media, choice of content, and demonstrated interest in the area (such as news) seem every bit as plausible to me, based on the data presented.

Now that you have been warned that I may not be able to review findings in this area completely accurately, let me present what I think is there. The data do suggest that a family communication pattern emphasizing harmony in social relationships (conformity) and little self-expression accords with a large amount of viewing televised violence (McLeod et

al. 1972a, 1972b). Opposite perceptions of family communication patterns (emphasis on controversy, ideas, and self-expression and none on social conformity) are associated with less television viewing (McLeod et al. 1972a, 1972b), less viewing of television violence (McLeod et al. 1972a, 1972b), and more viewing of public affairs programming (Chaffee et al. 1973). The one bit of supportive evidence provided by researchers outside of this group comes from Lyle and Hoffman (1972a) who report that among sixth graders high amounts of viewing are associated with reported low amounts of discussing current issues with parents. In another publication by Chaffee et al., however, it is reported that a perceived family communication pattern of emphasizing both social conformity and self-expression is related to higher viewing of news and lower viewing of entertainment (Chaffee et al. 1971)--which may or may not contradict the previously cited finding of Chaffee et al. (1973). In a somewhat different approach, Abel (1976) reported that children's viewing preferences were influenced by their perceptions of what their parents wanted them to watch if the perceived family communication pattern emphasized parent-child relationships rather than child-idea relationships. For me, the one conclusion to be drawn from these data is that greater viewing of news and public affairs programming and perhaps less overall viewing of television may be related to greater family emphasis on involvement with and expression of ideas, whether or not they lead to social harmony. Otherwise, I need to see more data before I can draw any further inferences about the relationships between family communication patterns--as defined by these researchers--and amounts and types of television viewing.

Rules

The television industry's most frequent response to criticisms of its products is to remind viewers that they control the on-off switch and the channel selector. Distaste for programs and commercials can be immediately removed by operating the appropriate parts of the control panel. Of course, this does not serve well for those viewers who wish to see more or different programs or to see them at different times. Nonetheless, it is an efficient way of dealing with many concerns about television, and it is one we should examine in considering the interpersonal factors in children's television experience.

There have been many studies of the ways in which, and the extent to which, parents exercise control over their children's viewing. While the methodology in many is questionable and the diverse samples and questions make comparisons difficult, all of them indicate that parental

control is probably not very extensive. For example, Lyle and Hoffman (1972b) report that roughly one-third of the 3- and 4-year-olds and one-half of the 5-year-olds they interviewed believed that they selected the programs they watched. Twenty-eight percent of the 3-year-olds, 13 percent of the 4-year-olds, and 12 percent of the 5-year-olds believed their mothers selected the programs, and 14, 18, and 9 percent respectively believed their older siblings did. In a companion study with older children, 19 percent of the 1st graders, 22 percent of the 6th graders, and 9 percent of the 10th graders believed their parents currently set limits on their television viewing (Lyle and Hoffman 1972a). Fourteen percent of the 5th graders and 27 percent of the 10th graders believed their parents had set limits in the past. Similar findings come from 6- to 12-year-olds who reported that they could generally watch what they wanted (Streicher and Bonney 1974). Reports of somewhat more control come from a study of 10th and 11th graders (Greenberg and Dominick 1969) in which somewhat less than half reported rules for how late they can view, about one-fourth reported some limits on the programs they can watch, and only about one-third said they control what they watch. Even these figures, however, suggest that the adolescents were given considerable freedom to determine their television viewing.

Parents are likely to report more control than their children report (Albert and Meline 1958; Greenberg et al. 1972; Lyle and Hoffman 1972a; Rossiter and Robertson 1975). Yet, even with the apparent tendencies to exaggerate, parents do not report especially high levels of control. Going back again to the Lyle and Hoffman data (1972a) we find that of the mothers of first graders--a group in which we might expect more control--nearly 60 percent report that they never set special hours when children may or may not view, nearly 70 percent report that they never restrict the total amount of time children may view, and about 30 percent report that they never decide which programs children may view. Among mothers of preschoolers, where questioning about control was quite limited, 59 percent of the nonworking and 30 percent of the working mothers reported that they never selected programs for their children (Lyle and Hoffman 1972b). These figures suggest that control of television viewing is at best quite limited among mothers of young children, while also indicating that at least 50 percent more of the mothers than of their first graders believe that they set limits on television. Similar conclusions about the limited parental control of viewing may be drawn from studies by Albert and Meline (1958), Barcus (1969), Bower (1973), Greenberg, Ericson, and Vlahos (1972), Hess and Goldman (1962), and Rossiter and Robertson (1975).

The consistently reported disparities between maternal and child perceptions of parent control of viewing (mothers and children from first through fifth grades have been sampled) point up a serious flaw

in all the work in this area. That is, all data on parental control of viewing have been gathered with self-report measures. The wish to lay blame on either mothers or children for the discrepancies between maternal and child reports cannot be satisfied with these data, although Rossiter and Robertson (1975) present some suggestive evidence that children may be the more accurate reporters. An obvious outgrowth of this state of affairs would be a recommendation to study parental control of viewing without resorting to either parental or child report. But in this case, a social science researcher is not going to recommend "filling the knowledge gap."

We can conclude from the data that parents, even those with young children, do not exercise much formal control over their children's viewing and that the control they do exercise is not always perceived as such by their children. While I wish that the data on the amount of control, the kinds of control, and the types of children for whom control is exercised were more clearly valid, I think the indications are enough to support a tentative conclusion such as the one I have just drawn. Accepting this conclusion, I think we should move on to find ways to help parents to exercise more control over their children's viewing.

Parents--poor, beleaguered souls that they are--ultimately have greater responsibility and more prerogatives than anyone else in determining their children's television viewing. This is not to deny the industry's responsibility to provide better, more varied content during more of children's waking hours. But even if the industry did provide this, different parents would still need--and want, one hopes--to choose how much and what their own children watched. Since a good many parents are concerned about their children's television viewing and its effects on them (Yankelovich and White 1977), why don't they now take more active steps? If they really wanted to, couldn't they get their children to watch only what the parents believed to be appropriate and as much as the parents deemed appropriate?

Only a few investigators have sought information about the factors which lead some parents more than others to control their children's viewing. Unfortunately this information gives us few, if any, leads as to what these factors are. In the late 1950s, Albert and Meline (1958) found no difference by social class in parents' concerns and rules about television. In the early 1960s, Hess and Goldman (1962) found no relationship between mothers' perceptions of television (its effects, the value of its content, etc.) and their control of viewing. In the early 1970s, Greenberg and Dervin (1970) found that youth from lower-income and from black families reported less parental control of viewing, Bower (1973) found that college educated parents reported

more control (46 percent) than did those with a grade school education (25 percent), Martin and Benson (1970) found no relationship between control of viewing and social class or education, and Phelps et al. (1974) found no relationship between control and maternal perceptions of television. In the late 1970s, Feldman et al. (1977) found that reported monitoring of children's viewing was unrelated to reported concern over either program content or accompanying commercials. Since social class differences (the only identified factor--and then only in some of the studies) are as likely to be related to social desirability influences in reporting as they are to actual differences in practices, we must question even this one tentative finding. The near consistency of the negative findings over a 20-year span, although from a small number of studies, suggests that we will have to be more clever if we are to identify the factors which lead some families to exert greater control over their children's viewing.

Parental control of viewing, while retaining for parents the prerogative of deciding the role of television in their children's lives, is a sure-fire way to control some of television's effects. For these reasons, it would be worthwhile to devote some of our resources to determining what factors lead parents to exercise what kinds of control over both the time spent viewing and the content viewed. Such projects obviously should include families from different social classes, educational backgrounds, and ethnicities, but these variables should not be looked to as determinants of control because they have not proved very useful in the past and because they would not, if found to be determinants, suggest reasonable avenues for helping parents to exercise greater control.

The variables that must be examined are those which could be used to help parents exercise control. Among those which might be considered are parental familiarity with what their children watch and what children understand of it, parental views about the desirability of the program messages, parental goals for the skills and interests their children develop, parental beliefs about, and evaluation of, the effects of television viewing in general and in terms of particular types of content, parental experiences with, and evaluation of, the effects of television on their children, the extent of parents' ideas about how to control television viewing, the extent to which parents have succeeded in their previous control attempts, and parental beliefs about the tangible benefits to be derived from changing children's viewing. This is a long list, but the failure of the studies by Hess and Goldman (1962) and Phelps et al. (1974) suggests that the list should be long to begin with. It is also a list which focuses on variables to be used in working with parents, a list we need if we are to help parents exercise more control.

Recently there have been attempts to encourage parents to be more thoughtful and active about their children's television viewing. For example, Action for Children's Television has begun distributing tags to hang on the television set which remind parents and children, among other things, that there is such a thing as watching too much television. This is the first step in a planned program of parent education. Also, United Methodist Communications has edited a book (Logan 1977) and sponsored workshops in television awareness training which, among other things, encourage parents to become familiar with what their children watch and to exercise greater control over it. Both of these efforts are laudable and useful, but their impact is likely to be limited for a variety of reasons. One is that control of viewing is only one of many areas focused upon. Another is that neither had the possibility of using information--now nonexistent--about what will actually help parents to control viewing. A third is that neither gives parents many specific suggestions about how to control viewing.

In my experiences, the more concerned and sophisticated parents often lack the necessary tools for much control. They have generally not thought about where the television set is placed, what they themselves do with television, what varieties of rules are possible, how consistent and firm they are in enforcing rules, how they need to provide attractive alternatives for their children, or how confirmed television viewers will have to learn--perhaps even painfully--other ways to amuse themselves. Moreover, most do not really believe that they can be successful in controlling viewing or that their children's behavior would truly be changed in desirable ways if parental control was successful. There is consistent evidence that people do not engage in behavioral change programs unless they know how to go about it and have strong beliefs that the results of change will be highly desirable. If parents lack these now, programs for parents must provide them. In my opinion, neither of the parent education programs described above goes nearly far enough in doing these things.

The premise of this section has been that parents can and should mediate television's effects by determining both how much television their children watch and what they watch. Such control must go hand-in-hand with fostering independent and wise viewers but early, strong control must diminish, if not disappear, as children mature and earn the right to make their own decisions. There is evidence now, however, suggesting that parents do not exercise much control for children of any age and that children do watch less when their parents control more (Bailyn 1959), but there is no information about what leads some parents to exercise

more control than others. I have suggested that we should learn more about what leads some parents to exercise what kinds of controls, and we should institute programs to help parents exercise the necessary controls. Obviously this will not mean that all parents exercise the same controls--parental values and resources differ too greatly in our society--nor will it mean that all parental control will be successful. It should, however, help parents to help their children learn skills and develop interests other than that of television viewing, to minimize the effects of content of which they disapprove, and to maximize the effects of content of which they approve.

Social Interactions

The final potential influence on children's viewing patterns discussed here is that of the nature and quality of children's social interactions. This includes the number and quality of peer interactions and the extent to which family relationships are harmonious. It should be noted that these variables are examined in relationship to amount of viewing only. (To my knowledge no one has examined their relationship to what is viewed.) It is also important to emphasize again that all studies in this area are correlational and while it is very tempting to draw causal inferences from some of the findings, the methodology does not allow it.

It has been hypothesized that children who do not get along well with their peers watch more television (because it is more rewarding) and that children who watch more television do not get along as well with their peers (because they know less about how to do so). There are no data which allow us to determine which causal pattern is more likely, nor are the data even consistent in finding the hypothesized relationship between these two variables. Nonetheless, I think the evidence is more supportive than not for the existence of such a relationship--without specifying what causes what. For instance, Murray (1972) reported that more passive 5-and 6-year-old boys (poor, inner-city blacks) also watched more television; Bailyn (1959) reported that sixth grade boys who had poor social interactions watched more television; Schramm et al. (1961) reported that children generally watched more television if they had unsatisfactory social relationships; and Chaffee and Tims (1976) in their review of previous literature concluded that the evidence generally supported the belief that adolescents watched more television if they had troubled interpersonal relationships. Somewhat contradictory findings come from Schramm et al. (1961) who reported that amount of viewing and reported passivity were unrelated and from Lyle and Hoffman (1972a) who found no relationship between amount of television viewing and reported loneliness or popularity of 1st, 6th, and 10th graders.

Studies of children's use of time provide supportive evidence for the proposition that more television viewing is associated with fewer, less harmonious peer interactions because greater time given to viewing can be associated with less time given to peer interactions. The one study which simply related reported amount of viewing to reported time given to peer interactions found that 1st graders who reported watching more television also reported playing less with other children and 10th graders who reported watching more television also reported engaging less in after school activities and sports (Lyle and Hoffman 1972a). All other studies on this topic compared children's activities prior to and after their families acquired television sets, or they compared the activities of children in towns with and without television reception. Almost uniformly they indicate that television viewing is associated with some loss of time for informal play activities, usually with peers (Baxter 1960; Maccoby 1951; Schramm, Lyle, and Parker 1961).

Supportive evidence with adults comes from Robinson's (1972) analysis of time allocation data from 14 international sites. This analysis indicated that those who owned television sets were less likely than those who did not own them to engage in conversation and to undertake social visits outside the home. As with the children's time use data, the decrements in these social interchanges are small, being about 5 minutes less conversation and 12 minutes less social visiting per day. Nonetheless, it is clear that children and adults who have television sets, or who watch them more, sacrifice some informal time with their peers which might, if it accumulated over long periods of time or occurred prior to the development of good social skills, lead to decreased ability to function well in social interchanges.

In considering the relationship between family functioning and television viewing, hypotheses similar to those regarding peers have been suggested, although they are complicated by assumptions that must be made about the extent to which one can escape family problems by watching television. Depending on the number and placement of television sets in the home and on family patterns of viewing, watching television may either increase or decrease the opportunity for contact with other family members. To date no one has tried to parcel out these variables, and the available data do not lead to clear conclusions. Maccoby (1954) reported that middle-class, but not lower-class, preschoolers did watch more television if their parents were more restrictive and frustrating. The social class difference was attributed to the presumption that middle-class children may escape parents by watching television. Schramm, Lyle, and Parker (1961) also reported that children with more family problems watched more television.

In contrast, Lyle and Hoffman (1972a) found no relationship for 6th and 10th graders between amount of viewing and either reported conflict with

parents about grades, friends, and the like, or reported discussion of personal and family problems with parents. Similarly, Chaffee and McLeod (1972) found no relationship for 7th and 10th graders between perceived parental punitiveness, restrictiveness, and affection, and amount of television viewing. Obviously, the data are too few and too varied to lead to any real conclusions. At best they might suggest that younger children watch more television if family relationships are difficult and if viewing provides escape from these problems. Any stronger or broader statement has to await more data.

This review of the relationship between children's television viewing and the number and quality of their social interactions with peers and family does not lead to any firm conclusions about television viewing and family dynamics. It does, however, lead to some concern that children who watch more television are also likely to interact less often and less well with peers. While it is impossible to determine the causal connections between these variables (and they are probably circularly effective anyway), they certainly lead one to suggest that most children would ultimately function better with their peers if they watched less television. The qualification, "most children," is important. There are some environments, notably poor, inner-city areas, in which parents deliberately keep their children indoors. They believe that the neighborhood is sufficiently dangerous or unsavory that their children are better off participating in it as little as possible. While one might argue that children should do something other than watch television while they are home or that "desirable" peers could be invited for indoor play, one must still acknowledge that there are areas of our Nation in which television viewing is probably a more desirable alternative than many others. Leaving these cases aside, there seems to be good reason for those who are concerned with children's development to give special help in developing interpersonal skills to those children who now devote much of their time to watching television.

Summary

For most youth we should not expect to find any magic formula--other than throwing out the set--which would dramatically alter viewing patterns. The data reviewed here certainly do not provide such a formula, although they give indications of ways in which we could help children to alter their viewing patterns. My belief is that early imposition of rules about television viewing and early training of children to engage in other activities might lead to the most longlasting, notable differences in viewing patterns. Parental limitations of television time and content are easier to accept when one is very young and they may therefore be easier to maintain or need less maintenance, when one is older. Acceptance becomes even easier when parents model patterns of television viewing and engage in those other activities which they wish their children to display. Commonsense and research on socialization in the family support such an assertion.

We should be exploring ways to encourage parents to serve as better models for their children's leisure activities, to establish and enforce rules for television viewing (at least for younger children), and to teach their children to find other activities as entertaining and relaxing as television. If demonstration projects were set up to accomplish these goals, they might produce double benefits. They would lead, one hopes, to viewing patterns and other activities in children which more nearly conform to their parents' views of what is desirable. Such projects could also, with the right design, allow us to gather some data of a more experimental nature, a highly desirable result. The area of interpersonal influences on children's viewing patterns is one which has, perhaps largely of necessity, solely utilized correlational designs. But because such designs do not allow any causal inferences, we have great difficulty recommending effective ways for parents (or others) to influence children's viewing. Demonstration projects could permit causal inferences by allowing us to gather some of these experimental data.

Whether or not experimental or quasi-experimental designs (including panel correlation studies which do not depend on the implementation of any experimental treatment) are ever used in exploring issues, future research needs much more frequently to use measures other than self-report. Right now much of our information is based on children's or parents' reports of what they do or what they believe the other person does. In a few cases children report for themselves and parents report for themselves, but only in the rare case does a researcher gather independent measures of the variables about which children and parents are reporting. There are good reasons to question the validity of many self-report measures--not because people lie, but because people often are not sufficiently aware of what they "really" do. Without recourse to measures more likely to be valid, we are left wondering to what extent children and parents are telling us what they actually do in the realm of television and social interactions.

A final recommendation concerns those youth who watch many hours of television each week. The reported relationships between high amounts of viewing and troubled peer relationships ought to concern parents and those professionals who deal with children and youth. Devoting unusually many hours to watching television necessarily leads to spending less time with peers, and at least for some children it is associated with unsatisfactory peer relationships. This is clearly a signal that the child's social skills and integration into a peer group ought to be examined.

All interpersonal influences on children's viewing patterns need to be placed in perspective. On the average, young children today watch 3 to 4 hours of television daily, and adolescents watch 2 to 3 hours. Like

adults, their viewing diet conforms rather closely to the menu television makes available to them. There are relatively few children who watch on the average less than an hour or 2 of television each day, and even fewer who watch only educational, news, public affairs, and/or "highbrow" programming. The differences in amount of viewing and in content choices are generally small variations on a pattern. This is not to say that we should ignore evidence about the factors which are related to such variations, rather it is to emphasize how much television viewing is a usual part of the lives of our youth. We need to find ways to help youth get the most benefit and least harm possible from all the television programs they watch.

INTERPERSONAL INFLUENCES ON LEARNING AND PERFORMANCE

Since all studies of television effects indicate that one should expect viewers to vary in how much and what they learn and choose to perform from television, some investigators have become interested in determining what factors are likely to lead to such variation. In this section I examine only one of these factors--adult commentary and instruction before, during, and after viewing. Of the factors which have been studied it is the only one which directly relates to the focus of this paper. The reader will note that this excludes the effects of siblings and peers, both of which might also be expected to influence learning and performance. Since I know of only one study on their effects, it is a necessary exclusion.

This section begins with an examination of adults' effects on children's learning from television and then proceeds to their effects of performance. The distinction between learning and performance is made here primarily on the basis of the dependent measures in the study. If testing specifically asked children to demonstrate what they had seen in the program or series, the study would be considered one about learning. Studies would also be considered to be about learning if they tested for knowledge for which most, if not all, Americans agree there is a correct answer. This second criterion is especially important, because it means that most studies of programming aimed at fostering cognitive growth will be classed as studies of learning, while most studies of entertainment programming will be classed as studies of performance. In some respects such a division may be a misleading one.

¹ In this study predominantly black, 5-year-old boys were more aggressive when they viewed a short sequence of modeled actions in pairs and then were given an opportunity to model in pairs than when viewing and opportunity for modeling were experienced alone. Similar effects were not found for prosocial behaviors (Drabman and Thomas, 1977).

Suppose a child viewed an entertainment program based on the novel and film, The Sailor Who Fell From Grace With the Sea, in which he or she was shown how to drug and kill a cat. If the child were then asked to describe what was shown, the study would be classed as one on learning. If, however, the child were placed in a room with a cat, with the necessary paraphernalia for drugging and killing, food and a brush for the cat, and a ball of yarn and a catnip mouse, and asked to show what to do with the cat, the study would be one of performance. On the other hand, suppose a child viewed another program in which he or she was shown in an entertaining way how clouds move in the sky. If the child were given pictures of a cloud, of a God-like creature blowing, of a child making the cloud move through his or her volition, and of feet or wings for the cloud and asked to show how to make the cloud move, the study would still be classed as one of learning. Structurally, both examples are the same, especially for the child who lacks firm cognitive and social knowledge in these areas, yet we adults classify them differently. I believe it is because in the first case we believe there is no one utterly correct thing to do with a cat (though surely we don't endorse drugging and killing), while in the second we believe there is only one reason clouds move (although children don't believe this). How children are supposed to divine this distinction in all the "information" they get from television is something of a mystery to me, but in the interests of consistency in the field I will maintain the distinction.

Learning

With that digression, let me return to the effects of adult activities on children's learning from television. In line with the digression, it is worth pointing out that all but two of the studies deal with programing designed to be instructive. The other two provide cognitive information, where possible, in entertainment programs (such as what detectives do) and test for learning of it. Both series were quite popular with children but less approved of by parents. All studies tested for learning without asking children directly to describe what they had seen on television. All indicate that adult activities vis-a-vis television programing increase children's learning of the content, although these studies differ considerably in the extent to which they can specify which adult activities lead to these effects.

Three studies indicate that preschool and elementary school children learn more from television if an adult points out important content, defines terms, and elaborates on concepts while the child is viewing (Borton 1971; Corder-Bolz and O'Bryant 1978²; Singer and Singer 1974). In two of the

² The measure in this study is a mixture of learning (information gain) and performance (attitude change), but I have classed it here since it appears the primary focus was on learning.

studies the adult was a familiar teacher who watched television with groups of preschoolers (Corder-Bolz and O'Bryant 1978; Singer and Singer 1974), while in the third the adult was an unfamiliar, but warm and compelling radio announcer (Borton 1971). In his review of instructional programing Schramm (1972) finds that students learn more when their teachers provide opportunities for postviewing practice of the content, especially when feedback is also given. A more recent study of social interaction programing indicated that kindergarten children learn more if an adult emphasizes the themes of a program through storybook reading or puppet play after viewing (Friedrich and Stein 1975). In this case, the adult was a familiar teacher. The remaining three studies--all involving mothers--could not specify what the adults did that made a difference. All three demonstrated greater learning from an educational series for preschoolers (Sesame Street or Around the Bend) among children whose mothers had been encouraged either to watch with their children or to engage them in activities relevant to program content after viewing (Ball and Bogatz 1970; Bertram et al. 1971; Salomon 1977), but they could not be specific about what actually occurred in the home.

I have noticed that studies of adult effects on learning always explored the ways in which adults might increase learning. There is not one study of the ways in which adults might decrease learning. This may be attributed to the beliefs that children learn much more than they perform and that it is somehow difficult to inhibit learning. I have often argued this way in discussing the undesirability of having children watch certain types of programs. It may alternatively be our conceptions of learning, as discussed in the "digression," because we mainly study learning of "facts" with which nearly everyone agrees. As long as this is the predominant paradigm under which we study learning from television, there is no reason to study ways in which adults might inhibit learning. All learning we would study would be desirable, so all we would want to know is how to increase it. I think we might want to explore whether there are ways of decreasing learning of selected content, other than turning off the set or switching the channel, but that is a matter for another paper.

All the studies I have reviewed suggest that learning from television may be enhanced by attention-directing and educationally supplementing state-ments and by activities outside of viewing which build upon television content. They also suggest this may be done by a parent, a teacher, or an unfamiliar adult, who may or may not be physically present, with either instructional or entertainment programing. There is enough work to believe this is possible with preschoolers and with elementary school children, but we cannot be so certain about effects with older viewers. Altogether the data certainly lead to the belief that we can help our children benefit more from their television viewing. This might come about through encouraging parents and perhaps older siblings to perform these roles for

in-home viewing, teachers to perform them at school for in-home viewing and more than they apparently do for in-school viewing, and at least one radio station to devote all or most of the day and evening to these roles. Children, through these efforts, could learn more while they watch television--no matter what the program.

Performance

There are three primary ways in which adults may influence children's performance of what they have seen on television: (1) by direct evaluative comments on what they are watching or have watched or by direct elaboration of content after viewing, (2) by providing children with the information, attitudes, or reasoning skills which lead them to mediate content effects themselves, (3) by providing an environment which encourages or discourages performance of what has been seen. While all three methods have received some attention in the literature, the amount of attention decreases markedly as one moves from the first to the third alternative. There are, however, indications that current research programs may alter this balance.

In the past decade, at least five investigators have examined the impact of adult comments and elaborations. Four of these examined the effects of adult approval of, disapproval of, or lack of comment on television content, and one examined the effects of role playing of television messages. Together they span an age range from preschool through college. All of them indicate that adult activities will--at least partially--mediate the effects of content.

Three studies are quite similar in structure in that they had an unfamiliar adult make judgmental comments about aggression in a program or film that the subjects were watching. Hicks (1968) had preschoolers hear approving, disapproving, or nonevaluative comments and found predictable differences in aggressive behavior in later free play--as long as the adult was in the room. Grusec (1973) replicated these results with preschoolers, but she also found that 7-year-olds demonstrated similar effects even when the adult was not present. Lefcourt et al. (1966) found that male college students did not increase the intensity of electric shocks subsequent to viewing if the adult experimenter had made censorious comments about aggression as they watched it. The effects were largely due to the sensitivity of those men who had a conflict about expressing aggression. In a similarly structured study, Prasad et al. (1978) found that 8-to 10-year-old boys were predictably influenced by negative comments their mothers made subsequent to viewing advertisements for action games--at least for the game with the less attractive advertisement. In a different vein, Friedrich and Stein (1975) found greater helping among kindergarten children who, under a teacher's guidance, had role-played such themes after seeing

them in Mister Rogers' Neighborhood than among children who had not role-played them. These studies lend strong support to the notion that adult evaluative comments and encouragement of practice (is this also endorsement of content?) can at least somewhat influence children's, adolescents', and adults' choices of whether to emulate what they have seen on television.

Recently some attention has been given to the question of whether adults can train children to mediate television's effects on them. The work has generally proceeded from the beliefs that children do not adequately understand how entertainment programs are produced--that they really are fiction--or why they are broadcast--to make money, not to teach--and that children do not understand the basic selling purpose of advertisements or do not possess adequate skills with which to evaluate their claims. These understandings and skills develop gradually throughout childhood and, for some areas, perhaps into adulthood, so children do have much they could learn earlier about television. What is not clear is the extent to which such knowledge would then mediate television's effects and the extent to which attitudes and reasoning processes may mediate effects. There is at least one study which suggests that the information and attitudes elementary school children hold about commercials are related to their impact on them--at least at times other than the pre-Christmas advertising glut (Rossiter and Robertson 1974), but there is not much more support than that.

At present there are only preliminary indications that adults may be able to train children to mediate television effects. Haefner et al. (1975) found, on the basis of self-report measures, that 11-to 13-year-olds were less influenced (note that they were still influenced) by commercials if the family patterns of communications were perceived to stress questioning. My own data (Dorr et al. 1980) from evaluations of television literacy courses taught to kindergartners and second/third graders indicate that they could learn the material and that it would affect the decisions they made about the fantasy/reality of entertainment program content. Although this study did not indicate that such changed perceptions of the fantasy/reality of entertainment content mediated the extent to which children changed their racial attitudes after viewing one entertainment program, other studies do suggest that programs which are perceived to be less realistic are less likely to influence viewers (Atkin and Wood 1976; Berkowitz and Alioto 1973; Feshbach 1972; Goranson 1969; Reeves 1977).

These findings support continued efforts to develop effective television literacy courses. At least five researchers (Charles Corder-Bolz, Norma and Seymour Feshbach, Bradley S. Greenberg and his colleagues, and I) are now working in this area with both entertainment programing and commercials, and we may expect more information on its use in the future. For now, it can only be identified as a potentially promising way for parents, teachers, older siblings, peers, and even television to mediate the effects of television on children.

The third way in which adults may potentially influence children's performance of television content is through the relevant environmental structures and sanctions they provide. Here there is even less work to report and most of it depends on data from self-report measures. For example, Ward and Robertson (1970) found that adolescents were more favorable toward commercials and more materialistic if their families had higher levels of communication about consumption. Other work by Ward suggests that children whose mothers yield to their purchase requests make more such requests than do children whose mothers yield less (Ward and Wackman 1972). Additional support for such effects is found in preliminary work by Clancy-Hepburn, Hickey, and Neville (1974) in which it was found that children request advertised foods less and prefer them less when their mothers have a better understanding of the validity of nutritional claims. Moreover, these mothers yielded less often to their children's purchase requests. The only piece of experimental evidence I know in this area is an older study by Bandura (1965) in which he demonstrated that preschoolers who were rewarded for demonstrating aggression they had seen modeled were much more likely to perform it than were preschoolers who were not rewarded. It is eminently sensible to assert that children's acting out what they have seen on television is likely to be heavily influenced by the environment in which they can perform, but we do not have much direct evidence to this effect. In my opinion it would be difficult to obtain, although it would be worthwhile. Television is only one of many socialization influences to which children are exposed, and it is desirable for us to try to chart their interconnections.

I have suggested three ways in which adults might influence children's acting out of television content. While the evidence for the effects of evaluative commentary on television content is the most consistent and covers a wide age range, it must be interpreted cautiously. Only one of the studies used actual television programs and/or commercials (Prasad et al. 1978). It is also the only study which used a familiar adult as the commentator (in this case the mother). It, however, only studied boys in a narrow age range and it had mothers deliver their comments in ways which are not likely to occur in daily life. Moreover, it found mothers to be effective only for the less attractive commercial, and even then not totally effective. Results such as these--partial effectiveness and effectiveness dependent upon the particular commercial and the type of negative comments made--are those that should be expected if television programs, ads, are not viewed as uniformly and consistently effective. Even more variations might have been expected if the sample were broadened to include girls and children of differing ages, social classes, ethnicities, and different types of mothers and parenting styles. Yet these variations, in conjunction with the small number of studies, leave us without strong assurances about the effectiveness of adult commentary.

Summary

The literature reviewed in this section and a logical analysis of socialization suggest that parents, teachers, and unfamiliar adults can be efficacious in at least increasing young children's learning from television and may be effective in mediating their performance of what they have learned. Additional research is desirable to elucidate the ways in which learning may be increased for older viewers, the ways in which evaluative comments during viewing (from parents and siblings) may mediate performance, the ways in which parents and teachers may encourage performance through postviewing activities, and the ways in which parents and teachers may train children to mediate television's effects. More knowledge in each area would serve as a useful guide to establishing courses and practices for parents, teachers, and children so that children could learn more from their viewing and be more discriminating in their choices of what to perform. I also believe that there is enough information now to help parents and teachers help children learn more from their viewing and to establish some demonstration projects in television use in schools and at home.

RELATIVE STRENGTH OF TELEVISION AND INTERPERSONAL FACTORS

Since other people can influence how much and what children watch on television and how much they learn from it, interest rather automatically turns to the question of which is most influential. Is it television, parents, peers, siblings, or teachers who ultimately determine what a child knows, believes, and does? Available data provide us with no answer to these questions and even suggest that there can never be answers when the questions are put this way. It is not until we begin to differentiate various types of information, attitudes, behaviors, and levels of salience and consistency for various potential influences that we begin to have some answers.

Our clearest answer is that other people do influence the viewing and effects of television; however, they do not often, if ever, totally determine television viewing, the viewing of particular content, or the effects (or non-effects) of viewing. How much children watch television is to some extent controlled by how much their parents watch and by the rules their parents have, but children still watch television--probably more than their parents would like. Children's viewing patterns generally conform to the menu television makes available to them, although parents and siblings may cause some variations. Children learn from television, but parents and other adults can increase the amount learned. Children's attitudes and behaviors are influenced by television, but the values, comments, and teaching of parents and other adults can modulate how much is accepted and performed.

But can we say anything about the circumstances under which other people are more influential than television or vice versa? Yes, but only a little. It seems that television programming is a source of more information than parents, peers, or teachers are, when the topics are those with which the child would not have much personal experience. Thus, children and/or adolescents report gaining from television rather than from other people most of their information about other nationalities (Lambert and Klineberg 1967), about the Viet Nam war (Hollander 1971; Tolley 1973), and about politics (Chaffee et al. 1970). Data from DeFleur and DeFleur (1967) which did not depend on self-report also suggest that television was a more potent influence than parents on children's knowledge of occupational roles and their statuses when these occupations were not encountered frequently in the child's community.

No one has examined what youth believe to be the best source for learning about topics close to home--for instance, how women behave, what foods are good to eat, or how to have a good argument with someone. There is some evidence which can be interpreted to suggest that youth would not find television a potent source of information in such areas. This is a study by Greenberg and Reeves (1976) in which they found that white children and adolescents from a white area ascribed decreasing amounts of reality to television portrayals of blacks, police officers, and families, in that order. This corresponds to what one assumes would be the relative amounts of actual experience with these three groups. If ascribed reality says something about how much children would learn from these portrayals, we would have the greatest learning from television when a child had the least experience with the topic (here blacks). Without studies which compare learning in different content areas, we cannot be certain that children do, or believe they do, learn more from television than from other people about areas with which they have less personal experience. But the assumption is a reasonable one, which is not contradicted by the preceding data.

The few studies which have compared the impact of television with that of other people on children's attitudes and beliefs generally report that other people are more influential than television. The four I know of approached the issue in the same way. Using survey methodology, children and/or adolescents were asked--among many things--to give their own opinions about a particular topic, to report the opinions of their parents or peers (or both) on the same topic, and to report how much they watched various kinds of television. Analyses were then conducted to determine the relative impact of parents, peers, and television on children's and/or adolescents' opinions. While results are always discussed in terms of relative impact, it is important to remember that in all cases children were themselves the sole

source of data. Thus it may be, for example, that children believe there is more similarity between their attitudes and those of their parents than there is between their attitudes and those presented on television. We, however, cannot be certain about parents' attitudes or about the attitudes they convey to their children, until we rely on measures other than those of the child's perception of the parents' attitudes.

Using procedures such as those just described, parents have been found to be more influential than television in determining children's and adolescents' attitudes toward the Viet Nam war (Tolley 1973) and children's attitudes toward aggression (Dominick and Greenberg 1972). Parents and peers have been found to be more influential than amount of television viewing in determining the realism children ascribed to television characters (Greenberg and Reeves 1976). Finally, the adjudged desirability of social behaviors of children's favorite television characters was more similar to the judgments of their peers than those of their parents (Meyer 1973). In assessing these findings it must be emphasized that all analyses used children's judgments of other people's attitudes rather than measuring these people's attitudes directly. This may or may not be a significant fault of the studies, but it is certainly a procedure which should be supplemented by direct tests of other people's attitudes and by direct observation of the attitudes which are actually made apparent to children. Until that time, the best we can say is that children and adolescents seem to see more congruence between their attitudes and those they believe their parents or peers hold than between their attitudes and those presented on, or perceived to be on, television.

Just as in the case of the relative impact of television and of other people on children's learning, we may hypothesize that television would be more influential than other people on children's attitudes when those people do not hold or communicate strong attitudes of their own. To my knowledge only one study has examined this possibility. Tolley (1973), in assessing the attitudes of children and adolescents toward the Viet Nam war, found that television viewing exerted little influence on their attitudes, but that parents' influence was stronger if they were more vocal in their support for or opposition to the war. Obviously, we need more data. It is a reasonable hypothesis that when television programming conveys attitudes, they are more influential if parents and others who are important to children do not themselves communicate strong attitudes. Television fills a void, so to speak, when parents and other significant people permit it to do so.

So far, I have presented evidence that other people may, at least to some extent, override television's messages, but there is also evidence that this does not always happen. For example, Prasad et al. (1978) found that mothers could significantly alter their sons' preferences for

advertised toys, but the effect was only apparent for the less attractive of two commercials. A second, somewhat tangential, example comes from Rossiter and Robertson (1974) who found that even those children who were generally unaffected by commercials succumbed to the pressures of the pre-Christmas glut of commercials for toys. Both studies suggest that sufficiently attractive or frequent commercials may override defenses set up against them. Whether similar findings occur with entertainment or educational programming and whether stronger defenses could be built are questions for which answers cannot be given until more data are available.

What are we left with? First, there is the obvious fact that television and other people interact in informing, influencing, and controlling children. Second, there is the suggestion that the relative impact of these influences may depend on the type of content being learned or accepted, on such characteristics as salience, strength, or attractiveness of the messages delivered by television and by other people, and on whether we are considering information gain or attitude acquisition (or change). Together these data suggest that if we are concerned about what children take away from their television viewing, we should provide them with our own information, attitudes, and behaviors. We should do so clearly, confidently, frequently, and consistently. Such a practice should help us to be more influential than television--when we want to be. It does not seem, however, that it will guarantee that we will always supersede television in the eyes of our children. Nor can we tell anyone how or when or for what content to do this.

What can be said conclusively is limited because it is a difficult area to study. There are few, if any, conceptual models for the ways in which television and other people should interact to influence children. There are few studies of the ways in which they do interact. Moreover, our conclusions from most of the existing studies must be cautious because much of the data come from self-report measures. Youth tell us where they think they have learned or have been influenced the most or what they think their parents and/or peers believe or value. One must have serious reservations, however, about the extent to which youth can accurately report such things. I could not say with any confidence where I learned the most about the Viet Nam war, who was most influential in determining my attitudes toward it, or exactly what my parents' or husband's attitudes toward it were. Could you?

CONCLUSION

Although interpersonal factors influence both viewing patterns and the effects of viewing, we have no models for the ways in which they influence, and the available information does not permit us to develop such models. Such a situation makes it difficult to propose broad programs to help youth put television in its proper place and to get the most possible from it. Yet the literature is strong enough in certain areas for us to suggest some more limited programs of action.

From various sources (e.g., Lyle and Hoffman 1972a), we know that youth discuss television with their peers, watch television partially so they will be able to discuss it with their peers, and use television material in play with their peers. We do not, however, know anything--at least I couldn't find anything--about the extent to which and ways in which viewing patterns are determined by peers, and we know little about the extent to which and ways in which peers influence what is learned and/or performed from television programming. Such a lack of knowledge needs to be corrected.

Certainly by the time children enter school, peers are important in determining their preferences, activities, beliefs, and knowledge. Since peers are an important interpersonal influence with American youth, we ought to be examining the role they play in the use of television. What differences might we expect in viewing if a child's peers draw most of their themes for conversation and play from their interpersonal interactions, from reading, or from television? What differences in learning and/or performance might we expect if a child's peers value and reinforce certain types of television content and not others? How do peers effectively communicate their values vis-a-vis television viewing and content? Questions such as these need to be addressed by researchers, and a major recommendation would be to encourage such work in the future.

In conducting such research--and any other research in this area--there is a need to move beyond measures which are based solely on a youth's self-report. At the least, we need reports from the youths under study and from the other persons whose influences are being determined. Better still would be measures which do not depend on self-report by anyone. It is possible, though costly and time consuming, to observe television viewing and interactions vis-a-vis television, and we need at least some data derived from such observations. We can also do more with information and attitude tests, with sociometric measures, and with various unobtrusive measures. Until more of our information is based on measures other than self-report, we must be tentative in the conclusions we draw.

Much of the reliance on self-report measures is due to the fact that many who work in this area only use correlational designs (surveys usually) in exploring issues. While such designs are highly desirable and informative, they are not enough in and of themselves. In particular they do not allow us to determine unambiguous cause-effect relationships and direction of causation. Without such knowledge, it is difficult for us to know how to begin to change viewing patterns or to modulate learning and/or performance. Experimental and quasi-experimental designs are possible in studying interpersonal factors influencing viewing and effects, and future researchers should be willing to invest the time and energy necessary to carry them out. Information from such research in conjunction with information from surveys would provide a better base for recommending what to do in the "real world" about television viewing and effects.

The preceding three recommendations--study of peer influences, use of measures other than self-report, and use of experimental and quasi-experimental designs--apply across nearly all the issues covered in this paper. Additional recommendations which were elaborated in the text are summarized here:

1. Identification of the information, beliefs, experiences, and personal activities of parents which lead them to establish and successfully maintain rules about children's television viewing.
2. Identification of those activities of parents, teachers, unfamiliar adults, peers, and siblings which lead to greater learning of television content.
3. Identification of ways to increase learning of television content by adolescent viewers.
4. Identification of the processes by which evaluative commentary during or after viewing mediates the effects of the content viewed and of the ways in which such commentary can be most effective.
5. Identification of the ways in which activities after viewing (such as discussion, role playing, reading, and play) can increase or decrease subsequent performance of what was seen on television.
6. Identification of the information, beliefs, experiences, attentional processes, and/or reasoning processes which will lead youths to successfully mediate television's effects for themselves.
7. Identification of the ways in which television and other persons interact to influence youth, with attention given to such potential mediating factors as the content area, the type of effect, the strength, salience, and consistency of the "influence attempt," the relationships between the youths and the other people, and the individual characteristics of the youths.

While it is clear that we need to learn more about the interpersonal influences on television viewing and effects, there are also areas--supported both by research and commonsense--in which we can begin to take some action. As noted earlier, some of these recommended actions might be profitably combined with research, since they would permit one to establish naturalistic experiments. The recommendations for action are elaborated in the text and summarized here:

1. Establishment of a program to identify youths who watch unusually large amounts of television so that those who are having difficulties in peer relationships may be helped to develop better interpersonal skills. Such a program might be conducted through schools, medical facilities, mental health programs, and community organizations.
2. Establishment of a program to help parents determine their children's viewing patterns through placement of the television, setting up and maintaining rules, training for alternative entertainments, and parental example.
3. Establishment of programs to help parents, teachers, siblings, and other media increase youths' learning of desirable content from television programming.
4. Establishment of programs to help parents and siblings (and perhaps teachers and other media) modulate the effects of what is seen on television through their evaluative comments.
5. Establishment of programs to teach television literacy to youths, particularly literacy which would lead them to better moderate television's effects for themselves. Such teaching might be done by parents, siblings, teachers, other media, or television itself.

All of these programs have a sufficient informational base to believe they could be helpful in mediating television viewing and its effects. Obviously television operates within the context of many other experiences and socialization agents. Many of these could be effectively marshaled to promote more beneficial uses and effects of television, and these recommended actions are a step in that direction. None of them is meant to deny the broadcast industry's responsibility to our youth, but that has not been the subject of this paper. Rather I have sought to delineate the interpersonal factors which influence television viewing and its effects, to suggest what more we need to know, and to recommend action we can take, based on what we know.

REFERENCES

- Abel, J.D. The family and child television viewing. Journal of Marriage and the Family, 38:331-335, 1976.
- Adler, R.P.; Freidlander, B.Z.; Lesser, G.S.; Meringoff, L.; Robertson, T.S.; Rossiter, J.R.; and Ward, S. Research on the Effects of Television Advertising on Children. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1977.
- Albert, R.S., and Meline, H. The influence of social status on the uses of television. Public Opinion Quarterly, 22:145-151, 1958.
- Atkin, C.K., and Wood, C. "Effects of Realistic vs Fictional Television Violence on Aggression." Paper presented at the annual meeting of the Association for Education in Journalism, College Park, Maryland 1976.
- Bailyn, L. Mass media and children: A study of exposure habits and cognitive effects. Psychological Monographs, 73(1): Whole number 471, 1959.
- Ball, S., and Bogatz, G.A. The First Year of Sesame Street: An Evaluation. Princeton, N.J.: Educational Testing Service, 1970.
- Bandura, A. Influence of models' reinforcement contingencies on the acquisition of imitative responses. Journal of Personality and Social Psychology, 1:589-595, 1965.
- Barcus, E.E. Parental influence on children's television viewing. Television Quarterly, 8:63-73, 1969.
- Baxter, W.S. The mass media and young people. Journal of Broadcasting, 5:49-58, 1960.
- Berkowitz, L., and Alioto, J.T. The meaning of an observed event as a determinant of its aggressive consequences. Journal of Personality and Social Psychology, 28:206-217, 1973.
- Bertram, C.L.; Pena, D.; and Hines, B.W. Home-Oriented Preschool Education Program: Summative Evaluation Report. Charleston, W. Va.: Appalachia Educational Laboratory, 1971.
- Borton, T. Dual audio television. Harvard Educational Review, 41:64-78, 1971.
- Bower, R.T. Television and the Public. New York: Holt, Rinehart and Winston, 1973.
- Chaffee, S.H., and McLeod, J.M. Adolescent television use in the family context. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.

- Chaffee, S.H.; McLeod, J.M.; and Atkin, C.K. Parental influence on adolescent media use. American Behavioral Scientist, 14:323-340, 1971.
- Chaffee, S.H.; McLeod, J.M.; and Wackman, D.B. Family communication patterns and adolescent political participation. In: Dennis, J., ed. Socialization to Politics: A Reader. New York: Wiley, 1973.
- Chaffee, S.H., and Tims, A.R. Interpersonal factors to adolescent television use. Journal of Social Issues, 32:98-115, 1976.
- Chaffee, S.H.; Ward, L.S.; and Tipton, L.P. Mass communication and political socialization. Journalism Quarterly, 47:647-659, 666, 1970.
- Clancy-Hepburn, K.A.; Hickey, A.A.; and Heville, G. Children's behavior responses to TV food advertisements. Journal of Nutrition Education, 6:93-96, 1974.
- Corder-Bolz, C.R., and O'Bryant, S. Teacher vs. program. Journal of Communication, 28:97-103, 1978.
- DeFleur, M.L., and DeFleur, L.B. The relative contribution of television as a learning source for children's occupational knowledge. American Sociological Review, 32:777-789, 1967.
- Dominick, J.R., and Greenberg, B.S. Attitudes toward violence: The interaction of television, exposure, family attitudes, and social class. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Dorr, A.; Graves, S.B.; and Phelps, E. Television literacy for young children. Journal of Communication, 30:71-83, 1980.
- Drabman, R.S., and Thomas, M.H. Children's imitation of aggressive and prosocial behavior when viewing alone and in pairs. Journal of Communication, 27:199-205, 1977.
- Feldman, S.; Wolf, A.; and Warmouth, D. Parental concern about child-directed commercials. Journal of Communication, 27:125-137, 1977.
- Feshbach, S. Reality and fantasy in filmed violence. In: Murray, J.P.; Rubinstein, E.A.; and Comstock, G.A., eds. Television and Social Behavior, Vol. II. Television and Social Learning. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.

- Friedrich, L.K., and Stein, A.H. Prosocial television and young children: The effects of verbal labelling and role playing on learning and behavior. Child Development, 46:27-38, 1975.
- Goranson, R.E. A review of recent literature on psychological effects of media portrayals of violence. In: Baker, R.K., and Ball, S.J., eds. Violence and the Media. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1969.
- Greenberg, B.S., and Dervin, B. Use of Mass Media by the Urban Poor. New York: Praeger, 1970.
- Greenberg, B.S., and Dominick, J.R. Racial and social class differences in teenagers' use of television. Journal of Broadcasting, 13:331-344, 1969.
- Greenberg, B.S.; Ericson, P.M.; and Vlahos, M. Children's television behavior as perceived by mother and child. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Greenberg, B.S., and Reeves, B. Children and the perceived reality of television. Journal of Social Issues, 32:86-97, 1976.
- Grusec, J.E. Effects of co-observer evaluations on imitation: A developmental study. Developmental Psychology, 8:141, 1973.
- Haefner, J.E., et al. "The Measurement of Advertising Impact on Children." Paper presented at the annual meeting of the American Psychological Association, Chicago, 1975.
- Hess, R.D., and Goldman, H. Parents' views of the effects of television on their children. Child Development, 33:411-426, 1962.
- Hicks, D.J. Effects of co-observer's sanctions and adult presence on imitative aggression. Child Development, 38:303-309, 1968.
- Hollander, M. Adolescents and the war: The sources of socialization. Journalism Quarterly, 58:474-479, 1971.
- Lambert, W.E., and Klineberg, O. Children's Views of Foreign Peoples. New York: Appleton-Century-Crofts, 1967.
- Lefcourt, H.M.; Barnes, K.; Parke, R.; and Schwartz, F. Anticipated social censure and aggression-conflict as mediators of response to aggression induction. Journal of Social Psychology, 70:251-263, 1966.
- Liebert, R.M.; Neale, J.M.; and Davidson, E.S. The Early Window: Effects of Television on Children and Youth. Elmsford, N.Y.: Pergamon Press, 1973.

- Logan, B., ed. Television Awareness Training. New York: Media Action Research Center, 1977.
- Lyle, J. Television in daily life: Patterns of use (overview). In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Lyle, J., and Hoffman, H.R. Children's use of television and other media. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972a.
- Lyle, J., and Hoffman, H.R. Explorations in patterns of television viewing by preschool-age children. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972b.
- Maccoby, E.E. Television: Its impact on school children. Public Opinion Quarterly, 15:421-444, 1951.
- Maccoby, E.E. Why do children watch television? Public Opinion Quarterly, 18:239-244, 1954.
- Martin, C.A., and Benson, L. Parental perceptions of the role of television in parent-child interaction. Journal of Marriage and the Family, 32:410-414, 1970.
- McLeod, J.M.; Atkin, C.K.; and Chaffee, S.H. Adolescents, parents, and television use: Adolescent self-report measures from Maryland and Wisconsin samples. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972a.
- McLeod, J.M.; Atkin, C.K.; and Chaffee, S.H. Adolescents, parents, and television use: Self-report and other report measures from the Wisconsin sample. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972b.
- Meyer, T.P. Children's perceptions of favorite television characters as behavioral models. Educational Broadcasting Review, 7:25-33, 1973.
- Murray, J.P. Television in inner-city homes: Viewing behavior of young boys. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.

- Phelps, E.; Rothenberg, J.; and Smith, P. "Parental Regulation of Television Viewing," Unpublished manuscript, Harvard University, 1974.
- Prasad, V.K.; Rao, T.R.; and Sheikh, A.A. Mother vs. commercial. Journal of Communication, 28:91-96, 1978.
- Reeves, B. "Children's Perceived Reality of Television and the Effects of Pro- and Anti-Social TV Content on Social Behavior." Unpublished manuscript, Michigan State University, 1977.
- Robinson, J.P. Television's impact on everyday life: Some cross-national evidence. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Rossiter, J.R., and Robertson, T.S. Children's TV commercials: Testing the defenses. Journal of Communication. 24:137-144, 1974.
- Rossiter, J.R., and Robertson, T.S. Children's television viewing: An examination of parent child consensus. Sociometry, 38:308-326, 1975.
- Salomon, G. Effects of encouraging Israeli mothers to co-observe Sesame Street with their five-year-olds. Child Development, 48:1146-1151, 1977.
- Schramm, W. What the research says. In: Schramm, W., ed. Quality in Instructional Television. Honolulu: University Press of Hawaii, 1972.
- Schramm, W.; Lyle, J.; and Parker, E.B. Television in the Lives of Our Children. Stanford: Stanford University Press, 1961.
- Singer, J.L., and Singer, D.G. "Fostering Imaginative Play in Preschool Children: Effects of Television Viewing and Direct Adult Modeling." Paper presented at the annual meeting of the American Psychological Association, New Orleans, 1974.
- Stein, A.H., and Friedrich, L.K. Impact of television on children and youth. In: Hetherington, E.M., ed. Review of Child Development Research, Vol. V. Chicago: University of Chicago Press, 1975.
- Streicher, L.H., and Bonney, N.L. Children talk about television. Journal of Communication, 24:54-61, 1974.
- Tolley, H. Children and War: Political Socialization to International Conflict. New York: Teachers College Press, Columbia University, 1973.
- Ward, S., and Robertson, T.S. "Family Influences on Adolescent Consumer Behavior." Cambridge, Mass.: Marketing Science Institute, 1970.

Ward, S., and Wackman, D.B. Television advertising and intra-family influence: Children's purchase influence attempts and parental yielding. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.

Yankelovich, S., and White, M.C. The General Mills American Family Report, 1976-77: Raising Children in a Changing Society. Minneapolis: General Mills, 1977.

Chapter 4. PROCESSES INVOLVED IN CHILDREN'S LEARNING FROM TELEVISION: A Review of Research.

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My assigned task for this chapter was "an exploration of the mediating intellectual processes related to learning from television." In essence, I will try to integrate the material covered around the following subtopics:

- Processes involved in learning from television: attention, selection, comprehension, and retention (including the influence of intentional and nonintentional conflicting values and messages delivered by television)
- The relationship between television and other sources of information and socialization
- The relationship between measures of cognitive functioning and learning from television
- Developmental differences in the role of television as "teacher."

All of these topics have entailed a broader rather than narrower sweep of the literature because of the relative lack of developmental studies relating to television.

Although the assigned task was not specifically addressed to research on children, I have focused on this partly to gather evidence for the question, "At what ages is television a more or less powerful teacher?"; partly because the question of processes involved in learning from television seems particularly relevant to children; partly because more people are concerned about the impact of television on children than on adults; and no doubt partly because I am a developmental psychologist.

To answer the question, "How do children learn from television?" one needs to ask, "What kind of television?" A distinction between television designed for teaching and learning, i.e., "educational television," and television not specifically so designed, i.e., all the rest, or "entertainment" television, is important for several reasons. First, questions regarding the effectiveness of television as a teacher might naturally begin with television designed to teach, but in North America there are few programs in that category. Thus, the research most obviously relevant to the question has been done on a small sample of programs (primarily Mister Rogers' Neighborhood and Sesame Street) aimed at very young children. This makes it difficult to generalize about the teaching potential of educational

television. Furthermore, research on children's learning of prosocial behavior from television has been largely limited to, and therefore confounded with, such programing.

Second, the single largest body of research on children and television, which is relevant to learning from television, is research on the impact televised aggression has on children's aggressive behavior.

This research has been focused exclusively on entertainment television. People do learn from entertainment television, and a good many social scientists are concerned about the reluctance to see all television programs as instructional (e.g., Comstock et al. 1978; Siegel in Liebert et al. 1973; Stein and Friedrich 1975b). Thus there are two batches of studies: those designed to assess the learning of positive attitudes or behaviors from values or behaviors from entertainment television or commercials associated with entertainment television. This in itself is a comment upon the context of television from which children might learn.

A second general point regarding learning from television has to do with the mechanisms involved. Social learning theory (e.g., Bandura 1971; 1973) has to date provided the best account of much of the evidence of learning from television, including both negative and positive examples (e.g., aggressive behavior, extinction of avoidance of feared animals, respectively). However, it is important to remember that social learning theory involves not only the notion that specific behaviors may be learned by viewing a televised model but also the notion that the general acceptability of a class of behaviors may be learned. The latter has been referred to as a disinhibiting effect and provides a better explanation of some of the long-term studies of the impact of television on aggressive behavior (e.g., Belson 1977; Joy et al. 1977) than would a theory restricted to the modeling of specific behaviors. Comstock and his colleagues (1978) have derived another mechanism for learning from television, namely, that the general arousal or excitation associated with the program, rather than the nature of its content per se, facilitates the learning of the content portrayed. Stein and Friedrich (1975b) have offered a similar hypothesis by suggesting that the warmth and calm pace of Mister Rogers' Neighborhood may be as important as the content in promoting prosocial behavior among its viewers. Huston-Stein and Wright (Huston-Stein 1977) are now conducting research to assess the impact of the formal properties of television, independent of program content. Another possible way in which television might affect learning, somewhat indirectly, is through displacement of other activities. Again, this is a case in which specific details of television programing are not primarily responsible for its effect.

A third general point to be kept in mind when reading the following review of research is that in many studies of the impact of television,

amount of viewing has been related to the level of some variable (information learned, behavior displayed, etc.). This of course has been most true of research involving nonexperimental designs. Given the current general content of television, a relatively small amount of viewing may be enough to produce some particular effect, and more viewing may or may not increase the effect substantially.

Several colleagues and I assessed the impact of television by studying three towns: one initially without television reception, one which initially received the Canadian Government channel, CBC, and one which received CBC and the three major U.S. networks. The town without television got CBC shortly after our initial data collection, and we studied all three towns again 2 years later. One of the substudies (Harrison and Williams 1977) in this project involved an assessment of creativity. We found that initially, fourth and seventh graders in the town without television scored higher than children in the other towns on a measure of ideational fluency, but 2 years later scores of fourth and seventh graders in the three towns were not significantly different. However, amount of television viewing was not significantly correlated with ideational fluency scores. Similarly, children (grades 1, 2, 4, and 5) in the town without television whose aggressive behavior was observed in free play on the school playground were the only group to increase significantly from the first to the second phase of data collection (Joy et al. 1977). Again, however, aggressive behavior and television viewing patterns were not related. To the extent that the change in both of these studies can be related to the inception of television (causal inferences must be made cautiously, since this was a natural experiment and subjects were not randomly assigned to towns), the results suggest that CBC television was enough to bring about a change. (CBC has been shown to contain less aggressive content than the three U.S. networks; Williams et al. 1977). Stein and Friedrich (1975a) made a similar point; namely, that partial attention to a program may be sufficient for a child to get the message, and virtually all children exposed may learn enough to be able to act out a behavior if they wish, especially if the behavior involved is simple and displayed repeatedly (e.g., aggression).

Stein and Friedrich's (1975a) point relates to a fourth general issue, namely that learning is, at the least, a two-stage process of acquisition and performance (Bandura 1973; Comstock et al. 1978; Stein and Friedrich 1975a, 1975b). The difficulty, as Comstock and his colleagues point out, is that it is impossible to determine whether a behavior has been acquired unless it is performed, for both cognitive and emotional (i.e., internal) behaviors. Failure to perform a behavior previously observed does not mean that acquisition has not occurred (Bandura 1973). A phenomenon known to developmentalists as a "sleeping effect" may occur, in which a behavior previously acquired is not performed immediately (e.g., during the experiment to test whether it was acquired) but somewhat later, if appropriate eliciting conditions occur. Comstock et al. cite Eleanor Maccoby's example of childrearing practices acquired as a youngster (through observation of one's own parents) but not performed until one becomes a parent.

PROCESSES INVOLVED IN LEARNING FROM TELEVISION

Just as I sat down to write this paper, the latest issue of the journal Child Development arrived. Turning to an article by Zuckerman et al. (1978), I read the first sentence, "Although attention, memory, and their interrelations have been explored in numerous studies (see Pick et al. 1975), we know little about how children attend to television or the ways in which their attention influences their memory of what they have viewed" (p.96). By integrating basic research on attention with research specifically concerned with television I shall try to make the summary of our knowledge less bleak.

To follow the distinction between acquisition and performance in learning, we observe that attention, selection, comprehension, and retention fall under the acquisition aspect of the process (c.f., Comstock et al. 1978). However, the dichotomy is not strict, since, for example, comprehension can only be assessed through performance. In summarizing research on attention, Pick et al. (1975) have taken the position that attention implies selectivity and that to study attention is to attempt to describe how this selection occurs (p.327). They also point out that even when it is selectivity in memory that is assessed, one cannot know "whether the locus of that attention is in memory, in perception or, as is likely, in both" (p.354).

Hagen and Hale (1973) summarized their research on the development of selective attention in children by inferring selective attention from the incidental stimuli learned in a task; low incidental learning in combination with high central task performance (learning the position of pictures presented serially in an array) indicated selectivity. For children in grades 1, 3, 5, and 7 they found an increase in central task performance but no changes in incidental learning. Their results indicated that the younger children adequately discriminated relevant and irrelevant information but were deficient in maintaining attention on the relevant information. In summarizing the research of Hagen and Hale (1973) and others, Pick et al. (1975) concluded that children remember more relevant information, including social information, as they get older. Careful instructions to remember what is relevant, naming what is relevant, and forming images of what is relevant all serve to aid memory. Unfortunately, there has been very little basic research on the development of selective attention during the ages 18 months to 3 years.

Attention as Measured by Looking at the Television Screen

When one turns to research concerned with children's attention to television, one finds different uses of the term "attention." I review first those studies addressed to the question of children's attention to television

in which the definition of attention has been broad--studies dealing with what children watch, how much they orient to a television set, etc. From there I review studies addressed to attention in a narrower sense--learning of central versus incidental messages, retention, comprehension, etc.

In many studies, children's attention to television has been measured by noting whether the child is looking at the screen. Despite the common complaint that television mesmerizes young children, one of the most striking findings is that, when they are watching television, children focus on the screen relatively less than one might think. Levin and Anderson (1976) assessed visual attention to the screen for 70 children, aged 12 to 48 months, who viewed in a naturalistic laboratory with their parents present. The mean proportion of the program watched ranged from 12 percent at 1 year to 58 percent at 4 years. The pattern of viewing changed over this age range. Frequency of looking at the screen increased dramatically at about 2.5 years, but there was a general linear increase in duration of looking. The attention of children under age 2½ seemed to be occasionally captured by the television. The next viewing stage involved being oriented toward the television set, playing with toys, and glancing up periodically. Older children monitored what was on while playing and, when they found something interesting, stopped and watched it. In a subsequent study with 3, 4, and 5-year-olds who viewed in pairs, the authors replicated the findings that the increase with age in visual regard to television was attributed to an increase in the duration of looking, not frequency of looks. There were individual differences in proportion of attention to the screen, duration of looking, frequency of looks, and talking about what was on the screen, which were reliable across sessions when age was partialled out.

Bechtel et al. (1972) video taped the home viewing behavior of 20 families. They found considerable variability in attention to the screen, low average levels of attention, and much other activity to be concurrent with television viewing. The 11- to 19-year-olds were slightly more attentive to the screen than the 20-75 age group, and both groups were considerably more attentive than 1- to 10-year-olds.

Zuckerman, Ziegler, and Stevenson (1978) also found relatively low levels of attention in a naturalistic laboratory setting in which toys and games were available in addition to the television set. The mean proportion of children ages 7.5 to 10.5 years attending during the program was 27 percent and, during the cereal commercials, 17 percent. (The program depicted either young children's adventures on a camping trip or a popular cartoon in which the lead characters entered and were disqualified from a baking contest). Attention decreased significantly with age for both the program and commercials, with a greater program/commercial difference

in proportion of children attending at the grade 2 (44 percent vs. 27 percent) than grade 3 (23 percent vs. 14 percent) or grade 4 (15 percent vs. 12 percent) age levels.

Other researchers have also found low levels of attention to commercials and a decrease with age in attention to commercials (Rubinstein et al. 1974; Ward and Wackman 1972^a, 1972^b; Wartella and Ettema 1974). Zuckerman et al. (1978) suggest that these findings may reflect habituation, since children see so many commercials (they cite a figure of 20,000 per year). It might be interesting to study attention to commercials in young children residing in Canadian towns which receive only CBC programming, since it is CBC (government-owned) policy not to show commercials on children's programs. Although young children do on occasion view "adult" programs, they prefer, and spend most of their time watching, children's programming.

Although the evidence is sketchy, it appears that there are developmental differences in what might be called children's concept of viewing. Very young children attend sporadically to isolated events on television, and even 4-year-olds display relatively little continuity in viewing. (Levin and Anderson 1976). Despite the fact that relatively low attention may be required to gain a sense of what is happening on television (one can listen and need not necessarily look at the screen to keep in touch with the events portrayed), some minimal level of attention is required for comprehension and retention. The ability to comprehend events and the filmic codes through which they are depicted undoubtedly plays a role in patterns of children's attention to television. In other words, age differences in attention to the screen may be a result of ability to comprehend messages portrayed. The details of the causal relationships need to be worked out in future research. Patterns of preschoolers' attention to the screen may vary according to the complexity of the programming. This has very clear implications for programming, but each of the few developmental studies done to date has included only one or two stimulus programs.

Before discussing specific details of children's attention to the content of television, it should be noted that refinement of measures of attention is important for future research. Children cannot see what is portrayed on television if they are not looking at the screen, but if they are looking at it, they are not necessarily processing the information portrayed. In colloquial terms, they may "tune out." Bryan and Luria (1978) used feedback electroencephalography to measure alpha-blocking in a study of sex-role learning conducted with children aged 5, 6, 9, and 10 years. The stimuli were slides. It would be interesting to use this method in conjunction with measures of orientation toward the screen to determine the adequacy of the latter as a measure of attention. Bryan and Luria (1978) also point out that using eye movements as a measure of attention (as opposed to the more global measure of looking) is problematic for young children because of the immobilization required (head and jaw support, a bite board, and the measurement of accommodative reference).

Learning of Central vs. Peripheral Material From Television

Several researchers have assessed the development of children's ability to attend selectively to central rather than peripheral information presented on television. Comstock et al. (1978) reviewed this literature and concluded that the evidence was unclear; results obtained by Collins (1970) and Hale et al. and Stevenson (1968) support a "learning to learn" (focus on what's important) hypothesis, but results obtained by Katzman (1972) and Hawkins (1973) are not entirely consistent with the view that, with development, children become more able to focus their attention. In 1972, Katzman summarized previous research by saying that young children attend equally to relevant and irrelevant material; as they get older their ability to recall increases; and beyond about age 12 they develop the ability to focus on central, and ignore peripheral, material. In particular, Collins (1970) obtained a linear increase with age over grades 3, 6, 7, and 9 in learning the essential content of a situation comedy (under no instructions to learn), and a curvilinear function for learning of nonessential content. Children who especially liked the film tended to learn more nonessential content. Hale, Miller, and Stevenson (1968) also obtained a curvilinear relationship between incidental learning and age over the range of grades 3-7 and college students; there was an increase up to grade 6 and a drop at grade 7. Katzman (1972) studied only boys in grades 4, 6, and 9 and found (as had been previously found for adults) that color facilitated peripheral visual learning relative to central learning. However, this was due mainly to the relatively greater learning of central material by the black/white treatment group.

Older children generally recalled more than younger ones, but the increase in recall was greater from grade 4 to 6 than from grade 6 to 9. Grade 4 children recalled more peripheral material relative to central material than did sixth and ninth graders. Again, there was a relationship between liking a program and learning; fourth graders learned most from a low-violence program, ninth graders from a high-violence program, and sixth graders learned equally from both. Subsequent to Katzman's (1972) review, Hawkins (1973) showed children in grades 3, 5, 7, and 9 either a children's or an adult black/white western. Incidental learning declined at grade 9 for the adult film but increased for the children's film. This finding surprised the author who interpreted it as probably due either to boredom (and thus learning of everything) or the novelty of a children's film for ninth graders.

An important relevant point has been made by Comstock et al. (1978); namely, that what constitutes central information (defined by Katzman 1973 as content relevant to the basic message, plot, or theme) for a child may be different from that for an adult. In all of the studies cited, the decision as to what was central and what was incidental was made by adults. As Comstock et al. (1978) point out, if the relative value of information

to the viewer is an inverse function of the viewer's familiarity with the material and a positive function of the perceived utility of that material, purely informational material (as opposed to material relevant to the message or plot) may be of more value for the young viewer. Certainly the learning of incidental versus central material has important implications for television as a teacher via programing intended for either educational or entertainment purposes.

In addition to the difficulty inherent in the fact that adults rather than children have defined what is central and peripheral in the stimuli used, the age range studied has been somewhat restricted. We know that there is an increase in learning of both central and peripheral material (as defined by adults) up to early adolescence and then a drop in incidental learning (if the programing is age approximate), but there have been no studies of children under the age of about 8 years. This is important because of (1) the evidence that young children's viewing patterns are such that it is difficult to imagine them learning much information central to a theme or plot; (2) evidence concerning young children's ability to understand sequencing, motives, and consequences; (3) Comstock et al.'s (1978) point that the value of information to the viewer may vary with age; and (4) Huston-Stein's (1977) hypothesis that children's learning is affected both by content and by experience with and cognitive capacity to understand techniques of the medium (filmic codes, etc.).

Children's Attention to Specific Aspects of Television Programs

In their study of children aged 12 to 48 months (10 at each half-year interval), Levin and Anderson (1976) assessed visual regard in relation to program segment length and found an inverse relationship ($r = -.55, p < .001$) which held up even when the first 10 seconds of segments were held constant. For longer segments, which initially elicited less attention, attention declined throughout the segment. For shorter ones, attention was constant or increased. Attention to one segment was unrelated to attention to the preceding segment, i.e., the children's "monitoring" pattern of viewing worked, although this is not surprising, given the clear-cut transitions in Sesame Street. Repetition neither increased nor diminished attention. Attention to the screen was enhanced for portrayals of adult females and children; motion as the central action, especially dancing and for older children; lively music, instrumental music, and individual singing (but not in groups); rhyming, repetition, and alliteration, which increased with age; auditory changes; letters and script; scene changes, and reverse motion. Attention was depressed for adult males (a finding worth noting because of the well-documented two-to-one preponderance of male characters on television); unusual live animals (llama, bear, gibbon), and central action that was relatively inactive and stationary--moreover, this increased with age. The attention of 4-year-olds, but not younger children, was enhanced for

animated material (Lyle and Hoffman 1972 have reported a similar finding).

Slightly older children, ages 6 to 8, were observed by Rubinstein et al. (1974) while watching two episodes of Lassie. Their findings were similar to those obtained by Levin and Anderson (1976) for younger children, in that attention increased with amount of vigorous activity and amount of background music. Attention also was found to increase for pan camera shots, camera cuts, and the presence of animals on the screen. The latter is in contrast with Levin and Anderson's finding, but the types of animals were quite different; Comstock et al. (1978) point out that Lassie is humanized and suggest that this may account for the difference. Rubinstein et al. (1974) found that attention decreased for silent adult women, a woman talking, and a man talking. The finding regarding women contrasts with that obtained by Levin and Anderson (1976) for younger children.

Comstock et al. (1978) summarized several studies indicating that children's attention is affected by several attributes of the characters portrayed, including social class (the class aspired to by the child rather than his or her present socioeconomic status), race, the perceived similarity of the character to the child, and the sex appropriateness of the character's behavior. With regard to the latter point, Barkley et al. (1977) studied the imitative behavior of children ages 4 to 11 who viewed a video taped model. They found that girls imitated modeled feminine behavior more than boys, regardless of the sex of the model displaying this sex-typed behavior.

Wartella and Ettema (1974) studied the attention of children, in nursery school (3 to 4 years old), kindergarten (5 to 6 years old), and second grade (7 to 8 years old), to commercials embedded in a situation comedy. Their findings suggest that auditory complexity has a greater effect on attention than visual complexity. They also found that nursery school children were relatively more sensitive to perceptual changes in the stimuli, and even second graders, while influenced by conceptual attributes as well, were strongly influenced by perceptual changes.

Huston-Stein (1977) recently has also summarized the formal (noncontent or production technique) features found to be most effective in attracting and maintaining attention (to Sesame Street, Lassie, commercials, Saturday morning cartoons, and a variety of children's programs). Auditory nondialogue features (lively music, sound effects, peculiar voices, nonspeech vocalizations, and frequent changes of speaker) attract and hold children's attention and are more effective than visual features. High levels of physical activity or action elicit and maintain attention. Changes in scene, characters, themes, or auditory events are especially good at eliciting attention, but less good at maintaining it. She cited work by Volkmar and Siegel indicating that 1-3-year-olds followed auditory cues more often than visual ones when the two modes dictated contradictory behavior.

Huston-Stein and Wright (as reported by Huston-Stein 1977) have proposed an hypothesis to account for developmental change in children's response to the formal features of television programming, based on Wright and Vlietstra's (1975) model of selective attention. In this model, information is initially obtained through perceptually based exploration, and later through logical search, with the shift occurring because of increased experience or cognitive development. Huston-Stein and Wright propose that younger children and less experienced viewers respond to the most salient features of television as isolated attention-getting events in their own right. Older and more experienced viewers habituate to these and also have a better understanding of filmic codes and structures (e.g., that a dissolve indicates a change in time and place). Note that it fits with previously discussed findings (e.g., Wartella and Ettema 1974, regarding perceptual and conceptual attributes of stimuli, and several studies of peripheral versus central learning).

Retention

Television's characteristics have been related to children's retention as well as attention. Zuckerman et al. (1978) studied the recognition memory of 7.5-to 10.5-year-olds for breakfast cereal commercials. In general, recognition was poor (mean 19.3 of 36 segments shown), but better for visual than for auditory information. There were, however, large individual differences among subjects in accuracy, and also among commercials. For a novel commercial (fictitious breakfast cereal) involving puppets and a standard commercial involving images of children, visual recognition memory was better than auditory recognition memory, but for a commercial displaying a montage of many people jumping into water, auditory recognition memory was superior. There was a consistent hierarchy of the eight commercials in impact on recognition memory.

Given the consistent individual differences they obtained, Zuckerman et al. (1978) suggested a need for analysis of the attention-eliciting characteristics of televised material. This same point was made by Stein and Friedrich (1975a): "There is clearly a need for further research on measurement of attention and on the importance of attention in children's reception of messages from television programs" (p.85). They found that although pre-schoolers were less attentive to prosocial than to neutral or violent programs, behavioral changes did occur following the prosocial programs. And, although males were more attentive (visually) to cartoons than were females, the behavior of females changed just as much. These findings were obtained in a field experiment of several weeks' duration and, in that sense, may echo those obtained by Harrison and Williams (1977) for ideation fluency and by Joy et al. (1977) for aggression in our long-term field study.

Hours of viewing were unrelated to amount of creative or aggressive behavior. As noted earlier, the relationships between attention or hours of viewing (an even cruder measure of attention than visual regard to the set) and retention or performance may not be linear but may follow a threshold model such that a relatively low level of attention or hours of viewing is sufficient. The level of attention sufficient for retention also probably varies with age. Zuckerman et al. (1978) found that fourth graders attended less than second graders to television programs and commercials, but their mean recognition memory scores were comparable. Again, however, one must be careful in interpreting mean differences: Their results might have been affected by the relatively small number of children who were highly attentive.

Comstock et al. (1978) summarized the research by saying that, like attention and comprehension, retention has been shown to be a function of the cognitive and symbolic capacities of the child, the structure and content of television programs, and environmental factors that serve to cue or motivate encoding and/or rehearsal.

Ball and Bogatz (1971) found that children of mothers asked to encourage their children to watch Sesame Street learned more than those whose mothers were not asked to encourage them to watch. More recently, Salomon's (1977) results for 5-year-old Israelis indicated enhanced learning for children whose mothers were encouraged to watch Sesame Street with them. It appeared in his study that the mechanism for increased learning was increased enjoyment of the program, and Salomon interpreted his findings in terms of a nonspecific general arousal hypothesis that all responses, including appropriate ones, were energized. Salomon did not assess attention in his subjects (they were not observed in the viewing situation) so the relationship between attention and enjoyment could not be assessed, but other researchers have found a positive relationship between recall of peripheral content and liking.

Comprehension

A few studies are relevant to children's comprehension of television, but most have been addressed to understanding specific aspects of programing, such as causal sequencing of events, motives, or consequences, rather than comprehension of the whole program.

Comstock et al. (1978) summarized findings regarding the perceived reality of television. Age is inversely related to how real television characters and programs are perceived to be (e.g., Lyle and Hoffman 1972; Greenberg and Reeves 1977). Perceived reality is associated with comprehending portrayed events as appropriate or useful in the real world. Even 25 percent

of 10th graders responded that people on television are just like those in real life. The extent to which children rely on television versus the real world for knowledge will be discussed in more detail later.

To understand much of television, including the motives and consequences for events portrayed, the ability to comprehend causal sequences seems basic. Dorr et al. (1971) found that the ability to comprehend a dramatic narrative increased with age. Only 4 of 20 4-year-olds correctly ordered three photos from a previously watched 20-minute film, and none could order a sequence of 7 or 9 photos. All 7- and 10-year-olds tested correctly ordered the three-photo sequence, and 16 of 20 10-year-olds did so for the nine-photo sequence.

Ordering a series of pictures in sequence is an item on the Wechsler Intelligence Scale for Children, given to children as young as 5, but memory is not involved; the child is expected to figure out the story from the scenes depicted on the cards, which are available concurrently to the child. In contrast, events portrayed on television are successive; memory is involved in understanding both their sequence and the causal relations among them. Thus the data of Dorr et al. (1971) are more directly relevant than those obtained in some other studies.

Piaget believes that the first operation to develop is seriation of the order of events and that this operation underlies later ones. An operation is a mental plan or rule. Operations develop from earlier behavioral laws or rules, which are external rather than mental (e.g., visually directed reaching.) The development of operations marks the transition from the preoperational (hence the term "preparation for operational thinking") to the concrete operational stage of development. This transition occurs now in North American children between the ages of about 4 and 7 years, but there are wide individual differences. Brown (1976) has summarized the results of several studies of children's understanding of temporal succession which support Piaget's description of a transitional stage just before the emergence of concrete operations. She stated that children at this stage can place a series of events in correct order of succession under the most favorable conditions when: (1) only one sequence must be considered at a time, (2) the order of events must be reconstituted in the order of their original occurrence, and (3) an immediate test is made of retention. The latter point is relevant to the findings of Dorr et al. (1971) and, of course, to most television programs. Brown summarized further that if young children are given meaningful connections linking each successive event, they can: (1) reconstitute items viewed successively when the integrity of events is not obvious, (2) maintain a series of events over longer retention intervals, and (3) even deal with reverse sequentiality when only one series is considered at a time. In sum, even preoperational children have some ability to exploit causal and logical links to infer the most probable cause of events, but they generally have great difficulty with reverse sequentiality even after simple sequences have been mastered.

Shultz and Mendelson (1975) had children ages 3½, 7, and 10½ observe a novel sequence of mechanical events. They found that the 3-year-olds tended to attribute causality to a following event, but the two older groups seemed to have the concept that causes precede effects. Kun (1978) also studied the causal order problem and was careful to remove linguistic and memory demands (thus making her findings less relevant to television). She found evidence that even 3-year-olds showed a significant tendency to answer why questions with antecedent events and argued that the idea that causes precede events in time is believed by children who, judging by their age, were still in the preoperational period. MacNamara et al. (1976) obtained similar evidence for 4-year-olds. On the other hand, Drozdal and Flavell (1975) found that although 5-year-olds could make some inferences as to where they had lost an object, they could not limit their search to the area where they must have lost it. All of these studies were not, of course, conducted with video-taped or televised material, so it is difficult to know how to extrapolate from them. At the least, they indicate that young children have some capacity for understanding causality, given the right conditions and tasks.

A study conducted by Shultz and Butkowsky (1977) is more directly relevant to children's learning from television. They found that 5-year-olds could use the scheme for multiple sufficient causes. Given that either of two causes is sufficient to produce an effect and given the information that an effect occurred and one of the possible causes is either present or absent, this scheme allows inferences about the presence or absence of the other possible cause. In this study, 5-year-olds used the scheme to analyze the behavior of others presented on video-tape but failed to use it for the same information presented in hypothetical stories. The authors suggested that the medium of television may facilitate the processing and comprehension of information, not just attention.

These findings fit very nicely with Huston-Stein and Wright's (1977, as reported by Huston-Stein 1977) hypothesis that experience with the medium of television, not just cognitive development, facilitates a shift from perceptually based exploration to logical search as a mode of obtaining information. They also fit with Huston-Stein's (1977; see also Stein and Friedrich 1975a) contention that the formal properties of television as much as its content (medium as much as message) may be responsible for some of television's behavioral effects. Huston-Stein (1977) described a study in which she and her colleagues found that preschoolers were as attentive to a high-action, low-violence program as to a high-action, high-violence program, and violence did not contribute significant variance independent of formal features in a regression analysis. She also described results of research by Salomon and his colleagues which indicated that young children understand the content of television better if they understand the formats used to present it.

Children's understanding of motives and consequences has been examined by several researchers. Motives and consequences are of particular interest because of the way they are used in television drama. For example, violence committed by law officers is almost always portrayed as justified (e.g., Williams et al. 1977). One of the most widely cited studies in this area was done by Dorr and Roberts (1972). Kindergartners showed almost no understanding of motives or consequences depicted on television for aggressive behavior. There was an increase in understanding with age. Third graders showed considerable understanding and 12th graders almost perfect understanding. However, the character (good and bad) of the motivations and consequences had only a slight, if any, effect on the aggressiveness elicited by material observed; exposure to violence increased aggressiveness.

Comstock et al. (1978) took the position that based on Piaget's theory, consequences should be easier than motives for young children to understand. Collins et al. (1974) suggested that the inability of young children to understand motives and consequences may arise from their inability to understand means-ends relations. They found that second graders tended to grasp the symbolic portrayal of aggression in terms of consequences; not one second grader cited motivations in evaluating the aggressor. By contrast, more than two-thirds of fifth graders based their evaluations on motives and more than 50 percent volunteered motives in their explanations. Rule and Duker (1973) found 8-year-olds more likely than 12-year-olds to base evaluations of an aggressor on consequences.

Collins (1973) edited a half-hour television drama so that all aggressive behavior was negatively motivated and punished. The drama was seen straight through (no-separation condition) or with 4 minutes of commercials between the motivation and aggression and 4 minutes of commercials between aggression and punishment (separation condition) by 3rd, 6th, and 10th graders. On a measure of aggression potential (questions designed to elicit aggressive responses), grade 3 children in the separation condition increased in aggressive responding from the pretest to the posttest more than third graders in the no-separation condition. In the two conditions, 6th and 10th graders increased to the same degree.

In sum, there is considerable evidence that young children do not understand motives and consequences particularly well, and even 8-year-olds display some deficiencies in this area.

In terms of general comprehension of information presented on television, there is some encouraging evidence for "television as teacher." Poulos (1977) found that with careful refinement, young children's understanding of 30-second prosocial commercials increased substantially. Initially, comprehension scores of children in kindergarten, grades 1 and 2 were in

the 38 percent to 67 percent range; they increased to 93 percent. Learning from educational television (Sesame Street) has been shown to be enhanced by repetition, an appropriate rate and level of presentation, and sharp distinction between relevant and irrelevant content (Ball and Bogatz 1970; Bogatz and Ball 1971; Lesser 1974).

As was pointed out earlier, it is important to distinguish acquisition of behavior (including the subprocesses of attention, selection, comprehension, and retention) from performance, but in practice this is problematic, since performance is the only avenue for assessing acquisition. Comstock et al. (1973) noted that acquired responses may not occur until eliciting conditions are present. Perceived alternatives to the behavior are also important in determining whether it will occur, and perceived alternatives increase with age. They summarized previous research indicating that, based on the characteristics of the portrayal, the likelihood of performance of a behavior is greater if it is reinforced, less if punished; greater if models are perceived as high in prestige, if the behavior is portrayed as justified (although as we have seen, this depends on the age of the viewer), if the behavior is portrayed as effective, and if displayed by role-appropriate models. For children, likelihood of performance is greater if the behavior is portrayed as true to life and if the portrayal is consistent and frequent (because perception of reality is then affected). In most of the research summarized, the modeled behavior was aggression, but Comstock et al. (1978) argue strongly that the same processes underlie all learning from television. They also note the importance with respect to development of the internalization of social norms which affect the likelihood of performance of a behavior. Young children are less likely to learn complex behavioral sequences and contingencies but are more likely to perform the negative behaviors they do learn because of lack of internalized social norms against such behaviors.

Stein and Friedrich (1975a) made several suggestions for the production of television programs designed to educate or persuade young children, based on various research findings: (1) emphasize visual and other nonverbal forms of presentation; (2) narration and summary labeling (e.g., by a parent) should not interfere with (be interspersed in) the events depicted; (3) visual attention is not a good indication of the likelihood of performance; and (4) some styles of presentation may elicit greater visual attention (e.g., fast pace, action), but others may elicit enough or more learning (e.g., the calm, slow pace of Mister Rogers). They also pointed out a need in future research to study more natural behaviors (both prosocial and otherwise) and to investigate self-esteem as a vehicle for increasing children's learning; they suggested that this may explain in part the effectiveness of Mister Roger's Neighborhood. Finally, they argued that children and parents deserve more variety in programing.

The Relationship Between Television and Other Sources of Information and Socialization

The question of the impact of television in relation to other sources of information and/or socialization is not as clear cut as it at first seems. Intuitively one might think the topic could be divided into evidence regarding the relative weight given to conflicting messages, evidence regarding the influence of television and other sources of information and/or socialization, and evidence regarding the influence of television when there is no other source. These categories are useful as broad guidelines, but for some data one comes up against the problem of deciding whether other sources present conflicting or supporting evidence to that presented on television. For example, can it be assumed that the messages presented on television regarding aggression, e.g., that it is a good way of solving conflict and since seldom portrayed as punished, acceptable (Williams et al. 1977), are contradicted by other sources of information and socialization? We know from research in childrearing practices that essentially the same messages are presented to children if their parents use physical punishment in disciplining them. Other children whose parents use other techniques would not receive that same message from their parents in that way. But does that mean they receive no message regarding aggression, a different message, or the same or different messages in other circumstances (from their parents or others)? This point is worth considering because of the enormous amount of research effort addressed in the past to the question of the relationship between televised violence and aggressive behavior.

Similar problems arise when considering the topic of sex-role stereotypes. Are the sex-role stereotypes shown on television contradicted or supported for the child by data from real life? They are probably supported for most children most of the time and contradicted for some, some of the time. Some researchers and theorists would argue that none of this matters; the real question is: Do children learn from the portrayals presented on television? For example, Klapper (1960) concluded that, with regard to politics, the media merely serve to reinforce existing predispositions through selective exposure and attention. The position of Comstock et al. (1978) is that it is possible that the children most likely to learn from public affairs programs are also most likely to watch them, but in any event the data demonstrate convincingly that those who do view do learn.

Based on their review of the literature, Comstock and his colleagues (1978) concluded that television most effectively influences social behavior when it reinforces attitudes and expectations derived through direct experience or when it defines situations about which information is not available from other sources (they cite Greenberg 1974; Klapper 1960; Roberts 1971). They go on to say that when television's message conflicts with information derived from direct experience or important interpersonal sources, its impact may be dramatically but not totally reduced.

The issue of the relative weight given to television and other sources of information boils down for some people to the question of whether television merely reflects society and its values (the industry's view) or also shapes them. George Gerbner contends that people derive a basic knowledge of society's superstructure from television. There is evidence from several studies that, at least in some areas, people's image of reality is indeed affected by television. Gerbner and his colleagues (Gerbner and Gross 1976; Gerbner et al. 1977) have found that both adults (1976, 1977) and children (1977) who are heavier viewers of television tend to overestimate by comparison with (same-age) light viewers the prevalence of violence in their community. The relationship for children held up when age, sex, education, and IQ were controlled. Children were also asked questions designed to assess their image of reality (called "mean world" questions by the authors (1977). Viewing level (light versus moderate--there were not enough children for their "heavy" category as it was defined for adults) was significantly related to the children's conception of social reality as assessed by the "mean world" questions, and this relationship was stable when sex, parental SES, age, and newspaper reading were controlled. Fouts (1977) has also reported data indicating that television may have influenced the perceptions of 5-14-year-olds of crime in their community (Calgary, Alberta). The modal number of both shootings and robberies estimated to occur in Calgary every week was 5, and of "fights," 50. In reality, of course, there are many more robberies than shootings in Calgary. Relative to the population, there are fewer shootings in Canada than in the United States, but even in the United States there are undoubtedly more robberies than shootings. Content analyses reveal, however, that on television, the converse is true (Williams et al. 1978). Additional, more anecdotal data concerning the influence of television on adult perceptions of reality come from our experiences arising from our content analysis of the portrayal of aggression on entertainment television (Williams et al. 1977). At a conference attended by the then Chairman of the British Columbia Police Commission, J. Hogarth, we reported our finding that more than three-quarters of the law officers in our sample of 109 programs committed violence (defined as severe instances of physical aggression which had the potential to kill) in the course of their official duties. Hogarth commented that most people would probably be surprised to learn that in the entire year 1976, only four shots were fired by members of the Vancouver police force, three on one occasion by one policeman and one on another occasion. Thus there were only two incidents. Vancouver is the third largest city in Canada and has one half of the country's heroin addicts, so these data are truly surprising to those of us who view television.

Doob and Macdonald (1977) replicated in the Toronto area the finding of Gerbner and his colleagues that heavy viewers tended more to perceive their community as violent than light viewers. However, they also found that people in the low-crime area of the city of Toronto watched about half as much television as did people in the downtown high-crime area. Thus the

correlation between heavy viewing and greater perceived likelihood of being a victim of street crime, of a child or adult being attacked in the park, etc., may also have reflected the reality of the heavy viewers' neighborhood.

Doob and Macdonald also conducted some experimental studies in which they manipulated the content of a news story. Adult subjects watched a 5-minute news broadcast. A story describing a beating death in Toronto which resulted, apparently, from a fight between two previously unacquainted people was included in the broadcast seen by two-thirds of the subjects, and for half of those (one-third of the sample) there was an additional statement indicating the fact that such stranger-to-stranger crimes are relatively rare. Subjects were then asked three questions: What was the proportion of assault victims who are strangers to their assailants; would they personally be more likely to be seriously harmed by someone known or by a stranger; and what was the proportion of the 48 murders in metropolitan Toronto the previous year involving people known, related, or married to their killers. Answers were combined into one index, with the result that the estimates of people receiving the additional information regarding the likelihood of stranger crimes were significantly lower than those of the controls (story omitted from the broadcast) and subjects in the other experimental group. Estimates of the latter two groups did not differ.

Hartmann and Husband (1974) reported evidence that adults in Britain had been affected by media reports of race relations; those with more direct evidence regarding race relations (residents of an integrated neighborhood) described race relations as less of a problem than did people with less first-hand evidence.

Taken together, these studies provide fairly clear evidence that the perceptions of reality of both adult and child viewers can be influenced by television. Some other studies indicate that parents play a role in the extent to which children's attitudes are influenced by television. Tolley (1973) surveyed elementary and junior high school pupils and found that parents seemed to have a strong influence on their children's opinions and knowledge of the Vietnam War. They tended to share their parents' attitudes about the war, and children of vocal pro- or anti-war parents were more knowledgeable about the war. There was evidence of selectivity in the children's perception of information presented on television about the war; those against the war thought the news was cast in an anti-war light, and those for the war saw the news as supporting the Vietnam war.

More indirect evidence of home influence in relation to television was obtained by Milavsky et al. (1976). They found a stronger relationship between exposure to drug commercials and use of proprietary drugs among boys from homes with many proprietary drugs available than among boys from homes with few such drugs available. This is an interesting finding

but does not necessarily imply anything about the effect of contradictory messages concerning proprietary drug use. The extent to which a different message from that portrayed on television exists in homes with few proprietary drugs available is unclear. It might be interesting to look at the relationship between drug use and exposure to drug commercials among children raised in Christian Science families where there would be more likely to be explicit anti-drug messages. It is also unfortunate that Milavsky et al. included only boys in their study, since there is evidence of greater use of prescription and nonprescription drugs by adult females than males, and many televised drug commercials seem aimed more at women than at men.

As Comstock et al. (1978) concluded, television's influence on social knowledge may be particularly strong when few other sources are available. Hartmann and Husband's (1974) data regarding adult perceptions of race relations are consistent with this model and reflect a negative influence of television. Gorn et al. (1976) obtained evidence of a potentially positive impact of television on preschool children. Verbally stated play preferences (actual playmate choices were not studied and would be interesting to examine) were more favorable toward minority-group children after they viewed specially prepared inserts on Sesame Street.

Himmelweit et al. (1958) found evidence that 10-11- and 13-14-year-old British children's values and perceptions of the world were influenced by television. Attitudes influenced included those about foreigners, jobs, success, and social surroundings. Television viewers (as opposed to nonviewers) were more ambitious and tended to have more middle-class job values. Somewhat related findings were obtained by Fouts (1977) for his Canadian sample. Despite a disproportionate number of viewers from upper-level income groups, 80 percent of the children (5-to-14 years) said that homes on television were nicer than their own, and 59 percent said that children on television had more "things" than they did. In addition, 60 percent perceived children on television as happier than themselves, and 50 percent thought children on television have more friends than they have.

DeFleur and DeFleur (1967) found that public school children had a greater understanding of occupations outside their experience featured regularly on television than unfamiliar occupations not featured on television. There was evidence for a stereotyping effect of television in that roles featured on television were rated more consistently than roles observed directly and unfamiliar roles not featured on television. In general, personal-contact occupations were best understood, followed by occupations known through television, and then by general cultural roles.

In other studies, children have reported learning information from television that is not available from other sources. Greenberg (1972) found that rural and suburban children were more likely than urban children

to state that they use television to find out how to behave with black people. Gerson (1966) found that teenagers reported using television for information about dating behavior when they could not easily obtain such information in their immediate environment. Studies designed to test whether children's behavior is actually affected in these ways would be relatively easy to conduct.

A major area of research dealing with the influence of television on children's perceptions of social reality has involved children's knowledge of sex roles and sex-appropriate behavior. As pointed out earlier, stereotypes are presented via both television and the real world, but there is some evidence that children who are heavy television viewers have more stereotyped sex-role attitudes than light viewers. Beuf (1974) interviewed 3-to 6-year-olds regarding their television viewing habits and careers planned for themselves when they grew up. Heavy viewers (67 percent) were more likely than moderate viewers (50 percent) to choose sex-stereotyped careers. Frueh and McGee (1975) found that heavy viewers in the kindergarten to grade 6 age range were more likely than light viewers to make same-sex toy choices on a projective technique, the IT Test.

Miller and Reeves (1976) took the view that the effects of television on sex-role stereotyping might be studied best by looking at the effects of portrayal of counterstereotypes. They showed five programs in which women were portrayed as police officers (two), a park ranger, a high school principal, and a television news producer, to children in grades 3 to 6, and then interviewed them. They compared children who recognized the characters with those who did not and found that for four of the five characters, children who recognized the character thought those occupations were more appropriate for women than did children who failed to recognize the character.

Flerx et al. (1976) conducted two experiments to examine the usefulness of symbolic modeling in modifying sex-role stereotypes of preschoolers. In their initial study they found that 4-and 5-year-olds displayed more of the traditional sex-role stereotypes than 3-year-olds. In the second study, 5-year-olds saw films depicting egalitarian sex roles (e.g., Free to Be...You and Me) or were read stories from egalitarian books or from traditional books. On a measure of egalitarian attitudes, the egalitarian book and film groups expressed more egalitarian attitudes than the traditional book group on both an immediate and a delayed (1 week) post-test. Both egalitarian groups had significantly higher scores on the delayed post-test than on the pretest. On a measure of sex-role stereotyping in children's play activities, the egalitarian-book group regressed at the 1-week post-test to the level of the pretest, and only the egalitarian film group expressed significantly more egalitarian views of children's play activities than the traditional book group or than themselves on the pretest. The authors concluded that only 2 hours of exposure had produced a reasonably lasting effect, and there was evidence that on some measures the film produced more lasting change than egalitarian books. It is perhaps worth noting that the dearth of commercial films portraying the sexes in an egalitarian manner meant the authors had to produce some themselves.

Taken together, the studies of children's sex-role learning via television indicate that television can be an effective teacher of both traditional stereotypes and more egalitarian attitudes toward sex roles. However, given the current content of television, children are far more likely to learn the former than the latter.

Several studies have been addressed to the question of whether parents (or other adults) can moderate the impact of television on children. The bulk of these studies have been concerned with the impact of either aggressive content or commercial messages.

Studies of the impact of commercial messages on children have been prompted by anecdotal complaints by parents about the use of children as pawns in an attempt to influence parents' purchasing behavior and general concern about children's consumer education. Robertson and Rossiter (1977) and Wackman et al. (1977) have shown that children's understanding of and response to commercials depend on several other factors. Robertson and Rossiter found a strong relationship between exposure to commercials and requests for a product, but with increasing age, requests decreased. Children with high exposure to commercials made fewer requests of their parents if they were well integrated with their peers, and low-exposure children made fewer requests if they had well-educated parents.

Goldberg and Gorn (1977) exposed 4- and 5-year-olds to a 10-minute program with no commercials, with two commercials advertising a new version of a familiar toy, or to the program with the two commercials on 2 successive days. The children were then told that their mother preferred a tennis ball over the advertised toy and asked which one they liked best. Significantly more of the children in the no-commercial group than in the other two groups said they preferred the tennis ball. All children were then shown a photo of a father and son and told that the father had denied the child's request for the advertised toy. More than 60 percent of the no-commercial group said the boy would still want to "play with his daddy," by contrast with fewer than 40 percent of the commercial group children. Prasad et al. (1978) also obtained evidence that commercials were more influential than parents in a study with 8-10-year-old boys. The boys viewed commercials for one of two toys embedded in a program, heard an argument from their mother against the toy (delivered in either a power-assertive or reasoning style) and then had an opportunity to claim a prize (the advertised toy or the other toy). One of the toys advertised was judged by adults to be somewhat more attractive than the other. For the boys who saw commercials for the very attractive toy, the mother's arguments against it failed, irrespective of delivery style. If the toy was judged to be moderately rather than very attractive, maternal reasoning worked and power assertiveness backfired.

Galst and White (1976) observed the attempts of preschoolers (4-to-6 years) to influence their mothers' purchasing behavior in supermarkets. They found that the harder a child worked to maintain commercials on a television monitor (assessed in the laboratory on another occasion), as opposed to the program narrative, and the more commercial television the child watched at home, the greater the number of purchase-influencing attempts directed at

his or her mother at the supermarket. Cereals and candy were both the most heavily requested items and the food items most frequently advertised in commercials directed at children.

In sum, the evidence regarding the relative weight given by children to messages from television when they conflict with other sources favors television commercials over parents. There is some evidence that television commercials are less effective for older children. Certainly by the time they reach adolescence, children express considerable skepticism about commercials (Comstock et al. 1978).

Evidence regarding the moderating influence of parents or other adults on children's responses to the portrayal of aggression are less clear. Grusec (1973) had 5- and 10-year-olds watch a film of an aggressive female actor, while an adult male made positive, negative, or neutral comments. For the older children, there was less imitative aggression following the negative commentary. However, the 5-year-olds imitated the model's actions regardless of the comments, and those in the negative comment condition also imitated the negative comments (i.e., the criticisms of the behavior they displayed). In a study by Hicks (1968), children aged 5-8 years observed a film of an aggressive adult male with an adult who made positive, negative, or no sanctions against the model's behavior. When the adult co-viewer remained with the child following the film, imitative behavior increased for the positive sanction group and decreased for the negative sanction group by comparison with the controls. However, for children who were alone following the film, sanctions did not seem to have an impact, and the child was less likely to specifically imitate the model, displaying more nonimitative aggression. Dominick and Greenberg (1972) had fourth to sixth graders rate their parents' values toward aggression and indicate their own attitudes toward aggression. The only group for whom parental values influenced the effects of heavy viewing was middle-class boys. If they perceived their parents as clearly disapproving of aggression, their attitudes toward aggression were unrelated to the amount of violence they watched on television. If they perceived their parents' attitudes toward aggression as unclear, middle-class boys who viewed a lot of violence also displayed more aggressive attitudes. For lower-class boys and girls of all classes the relationship between aggressive attitudes and viewing violence on television was not reduced by parental disapproval. Overall, however, degree of parental approval for aggression was more strongly related to children's attitudes toward aggression than was regular viewing of violent televised drama. McLeod et al. (1972) also found a lower correlation between violence viewing and aggression for adolescents of parents who emphasized nonaggression than for those whose parents did not.

Stein and Friedrich (1975b) reviewed the evidence concerning parental impact in relation to television's impact on children's aggressive behavior and concluded that parents can counteract the effects of television

on older children if they convey strong disapproval. However, for young children this may not work when there is no adult supervision (Hicks 1968), and Grusec's findings indicate it may not work at all for 5-year-olds. The evidence that parents can counteract television's influence is encouraging, but less so when one realizes the lack of studies conducted with young children, especially in view of the evidence cited earlier that young children do not understand the motives and consequences portrayed in an effort to diminish the effects of aggressive behavior, and the point of Comstock et al. (1978) that young children have fewer alternative behaviors in their repertoire so they may be more likely to imitate ones they observe. In addition, children do not necessarily (or even usually) view television with their parents, and, if they do, their parents do not necessarily offer negative sanctions regarding the aggressive behaviors displayed. Thus, given the overwhelming evidence concerning the relationship between televised violence and children's aggressive behavior, the evidence concerning parental influence in relation to television's influence is paltry and not very encouraging.

The picture is substantially brighter when one reviews the evidence regarding parents' influence on children's prosocial learning. Comstock et al. (1978) concluded that there is consistent evidence that viewing realistic prosocial programing can increase prosocial behavior, at least among preschoolers, and that the impact is enhanced via training. Ball and Bogatz (1970) found that children who watched Sesame Street with their parents learned more than those who viewed alone. Salomon (1977) obtained a similar result for Israeli children. Further analyses of his data indicated that the result occurred because of increased enjoyment of the viewing situation, rather than more direct parental influence. Corder-Bolz and O'Bryant (1978) found that having a teacher in a daycare center observe Adam 12 (a relatively nonviolent crime show, according to the authors) with 4-5-year-olds and comment on the program led to an increase in informational learning (e.g., what playing hockey means). On the other hand, Shirley (1974) found that adult commentary negated many of the positive effects of viewing Mister Rogers' Neighborhood when the comments interrupted the program. This finding is puzzling but may relate to the hypothesis (Huston-Stein 1977; Stein and Friedrich 1975a) that the calm pace of Mister Rogers' Neighborhood is important in determining whether learning of prosocial behaviors will occur. Comments which interrupt the program may alter or detract from the atmosphere or pace.

In sum, there is considerable evidence regarding the effectiveness of "television as a teacher" and a small amount of evidence indicating that parents or other adults may, depending on the age of the child and other factors, moderate the impact of television on children. Stein and Friedrich (1975b) concluded that in the realm of aggression, the ability of parents to counteract the teaching of television appears limited, and the most effective modification of programing would be to reduce the amount of violence presented. Our content analysis led us to the latter conclusion as well, especially since in our sample of programing, 70 percent of the aggression (both verbal and physical) was incidental to the plot (Williams et al. 1977).

Another way in which parents might reduce the impact of television on their children would be to reduce the amount of time they spend viewing it. Although most parents apparently do not severely restrict their children's viewing, some do. I did not come across any research conducted with such children. As Comstock et al. (1978) point out, there are difficulties in comparing such a sample with others--it is self-selected and would vary systematically in many other ways as well--but it would be interesting to find out more about such children. A recent report by Edgar (1977) of the results of a survey of 298 families in Melbourne, Australia, who chose not to have a television set in their home, might be a starting point. The parents who responded to the advertisement and completed questionnaires said their children didn't seem to mind not having television.

Relationship Between Measures of Cognitive Functioning and Learning From Television

Relatively speaking, few studies have provided information about the relationship between children's learning from television and various aspects of their cognitive functioning. This may be in part due to a general tendency to study children as if they were homogeneous, rather than to ask questions about the impact of television on a particular type of child at a given age level. I suspect that another reason that relatively little information on this topic is available is that the whole issue of measures of cognitive functioning is very thorny. In particular, there is controversy as to whether such measures reflect ability or achievement (in school, or in the acquisition of mainstream culture). However, given the evidence from content analyses that television portrays a narrow, rather than diverse, view of North American society, it might be interesting to assess the extent to which television affects children's acquired knowledge about the mainstream culture, if the findings were not misinterpreted to reflect children's ability to learn.

In several studies, children's television viewing patterns have been examined in relation to scores obtained on IQ tests. Stein and Friedrich (1975b), p. 187 concluded from these data that "most recent studies have found that the amount of television watched bears little relationship to intelligence or school achievement. Where relations do appear, heavy television viewing is associated with low intelligence or poor achievement." The conclusion reached by Comstock et al. (1978) was more specific as to age levels. They cited negative correlations obtained for adolescents between amount of viewing and mental ability by Himmelweit et al. (1958); Himmelweit and Swift (1977); Lyle and Hoffman (1972); McLeod et al. (1972); and Schramm et al. (1961) but little or no relationship for younger children. For example, Childers and Ross (1973) found no significant relations between television viewing and IQ scores, school grades, and

Iowa Test of Basic Skill (school achievement test) scores for 100 fourth- and fifth-grade students. Several researchers have reported that many of the brighter students at grade six level are among the heaviest viewers (Himmelweit et al. 1958; Lyle and Hoffman 1972; Schramm et al. 1961).

Earlier in this chapter I argued that when significant correlations are not obtained between television viewing habits and some other measure, one can only conclude that there is not a linear relationship. There may, for example, be some relatively low level of viewing which has an impact but which is also characteristic of most children. This is conjecture, of course, but may be relevant to the finding of a negative relationship between cognitive performance and television viewing for adolescents but not for younger children. Characteristically, there is a dip in television viewing during adolescence. These figures, of course, reflect means for adolescent samples. It may be that most adolescents view somewhat less than they did when younger, or it may be that some adolescents view substantially less, and others the same or more. If the latter is the case, it would be interesting to know the characteristics of those whose viewing drops substantially and whether that has something to do with the finding of a negative correlation between measures of cognitive performance and television viewing for adolescents. As in other areas of research concerning television and children, some idiographic analyses as well as the more usual normative data analyses might provide greater insight.

Aside from the studies cited above concerning children's television viewing habits, not much has been done on the relationship between measures of cognitive functioning and learning from television.

In their field study of the effects of prosocial television on preschoolers, Friedrich and Stein (1973) found that the children who were above average in intelligence were more prone than other preschoolers in their prosocial television-viewing group to increased task persistence. However, intelligence test scores did not predict changes in prosocial interpersonal behavior or aggression. They suggested that reinforcement for persistence received from the general environment may mediate the effects of televised messages, and more intelligent children may receive more such reinforcement.

In our study of three communities varying in television reception, we administered the Wechsler Intelligence Scale for Children (WISC) Block Design and Vocabulary subtests to children in grades four and seven in all three towns when the town without television had no reception, and, 2 years after they got television, to children in grades four and seven (cross-sectional subjects) and grades six and nine (longitudinal subjects), again in all three towns. We had hypothesized that television might have a positive effect on children's vocabulary scores. The results provided no evidence for this hypothesis. In retrospect, we were sorry we did not

obtain vocabulary scores for children in the earlier grades (because of the large number of substudies in the project, we did not want to inundate any particular grade, and second graders were involved in the aggression and reading skills studies). Schramm et al. (1961) found in their study of U.S. and Canadian communities that children with television came to school with better vocabulary scores than those without it, but the differences disappeared by the end of elementary school. It may be that elementary school children without television read more than those with it and thus have comparable vocabulary scores, once reading skills are well established.

But Murray and Kippax (1978) have recently reported data from Australia which do not support this hypothesis. Children in their no-television town were more involved in radio, records, and comics than children in their towns with television, and children in the latter were more involved in books than children in the no-television town. However, children in both of their towns with television received a public channel. In one town it had been the only channel for 1 year, and in the other it was one of two channels received for 5 years. On this public channel, 34 percent of the weekly programming was instructional or educational in nature. This is markedly different from the programming available in our communities and in North America in general. Murray and Kippax found that children in the town with the public channel for 1 year reported reading more books than those in the town with 5 years of experience with television, indicating that television may have stimulated reading in the short run.

To return to our findings, there were also no significant differences among the WISC block design scores of children in the three towns both before and after the town without television got it (Harrison and Williams 1977). We had given the block design test because we thought it was unlikely there would be differences, although one should not of course put forward the null hypothesis.

One of the other substudies in our project (Corteen 1977) involved the assessment of the reading skills of children in grades two, three, and eight. The word, phrase, and pseudoword items from a standard reading test were presented tachistoscopically in an attempt to control attention and time of presentation. There were no differences in the scores of eighth graders at either time of data collection. This may have been a ceiling effect: The scores were high in all towns at both times. The general finding for the younger children (grades two and three) was that before they received television, the children in the town without it had better reading scores than children in the towns with television, but not afterward. In fact, at time 2 the third graders from the town initially without television scored below the third graders in the other towns. This is not surprising, since they had been in grade one when television

arrived (in November), and one would expect television to have greatest negative impact on reading at that point. It should be noted that one cannot infer the mechanism whereby television affected reading skills (if television was indeed related to reading scores--causal inferences must be made cautiously). It could be that the children who were in grade one when television arrived stayed up late and were tired in school when reading was being taught. For whatever reason, their reading scores were poorer than those of their age-mates who had been in grade one when their town still had no television.

Furu (1962) also found a drop in reading ability when television first came to Japan. In his study, the drop occurred for boys in grades five to seven.

There have been a few attempts to assess television's impact on other aspects of cognitive functioning, including creativity. The question of how to define and measure creativity is difficult, especially for children, but assuming that it exists, the findings are interesting. Klapper (1960) suggested that less structured media presentations may permit greater freedom of imagination, and thus the visual media (television, films, slides) may limit imagination more than the verbal media (print, radio, audiotape). The results of several studies support his conjecture.

Meline (1976) had 120 sixth and seventh graders write down their best, most original ideas to four real social problems. The children who had previously seen a video presentation of a solution gave consistently fewer solutions which departed from or overturned the given facts and concepts than did children who previously received a print or audio presentation.

Singer and Singer (1976) assigned children aged 3 to 4½ years to one of four groups matched for age, sex, IQ, and predisposition to imaginative play as assessed in a pretest. The children who spent half an hour per day for a week with an adult receiving make-believe training improved most from the pretest to the posttest in imaginativeness of play and positive affect. Children who watched Mister Rogers' Neighborhood with an adult who commented on the program events improved less than the previous group. Children who watched Mister Rogers' Neighborhood without an adult did not improve, and the control group's scores (no television, no training) fell from the pre- to the posttest. The authors concluded that television does not have much impact on imaginative play.

Wade (1971) obtained a negative relationship for adolescents between creativity scores and hours of television viewing, and no relationship between creativity scores and use of print media. There was evidence that more creative adolescents spend more time and energy on activities that preclude viewing.

In addition to administering the WISC Block Design and Vocabulary Subtests to children in grades four and seven (and at the second time of data collection, to longitudinal subjects in grades six and nine as well) in our three-town study, we administered some verbal and figural measures of ideational fluency (Harrison and Williams 1977). They were taken from Wallach and Kogan's work on creativity and were administered individually in a relaxed, untimed setting. There were no differences in the figural fluency scores of children in the three towns either before or after the town without television received it. However, before television arrived, children in that town had significantly higher verbal ideational fluency scores than children in the other two towns, who did not differ. Two years after their town obtained television reception, their scores had decreased to the level of children in the other two towns (this was true of both the same and same-aged subjects).. At neither time were creativity scores correlated with hours of television viewing.

There was an interesting finding relevant to the question of whether the relationship between television and creativity scores results from differential use of television by more and less creative children. A median split was made on the verbal ideational fluency scores at time 1 for children in the town without television (before they were regular viewers). There was no difference in the mean hours of viewing 2 years after television arrived for children initially above and below the median. Incidentally, similar analyses revealed no differences in use of television at time 2 for children initially high, average, or low in aggressive behavior, a finding which contradicts the assertion by some that televised violence affects only those children already predisposed to behave aggressively (Joy et al. 1977).

Finally, a few researchers have questioned television's relationship to children's emotional development. Comstock et al. (1978) concluded there was some evidence that heavy television viewing was related to social malfunctioning, especially given that children report they watch television when they have nothing better to do. They cited Himmelweit et al. 1958; Johnstone 1974; Lyle and Hoffman 1972; Maccoby 1954; and Riley and Riley 1951.

In Fouts' (1977) sample of 5-to 14-year-olds, 77 percent said they dream at night about things seen on television, and 57 percent reported having had nightmares about televised material. Reporting dreams about television was not related to age, but there was a significant negative relationship between age and reporting nightmares about television.

In asking what are the effective properties of television for children's learning, Huston-Stein (1977) and Stein and Freidrich (1975a) suggested that the formal properties of television be examined along with the content. This may be an important avenue for future research on the relationship

between television and children's emotional development. Stein and Freidrich's (1975a) hypothesis that some of television's prosocial content may be effective because it increases children's self-esteem is an especially interesting one to investigate. They were referring especially to Mister Rogers' Neighborhood, which emphasizes self-esteem and on which many of the prosocial studies have been done.

Developmental Differences in the Role of Television as "Teacher"

The question of developmental differences in the role of television as a teacher brings us back to the question of the content of television. Very little of the current content is designed specifically to teach. Each of the programs designed to educate as well as entertain appeals to a narrow age range. Sesame Street, for example, is popular with 3-to 5-year-olds but not with older children, and Big Blue Marble with 4-6 year-olds (Comstock et al. 1978). This is not surprising, and indeed, as Comstock et al. (1978) point out, the rapidity with which development occurs essentially dictates that children's educational programs be age specific. Most of the currently available programs are aimed at children below about age 6. It is difficult to know whether the finding that by the time children are in grades one or two they seldom mention "educational" programs among their preferences (Lyle and Hoffman 1972; Murray 1972) reflects supply or demand. For the same reason, it is difficult to know how effective such programs would be in teaching children in middle childhood and beyond. Certainly, the research conducted on the effectiveness of educational programs for preschoolers is encouraging. Cognitive skills and prosocial attitudes and behaviors have been acquired, and enhanced learning has occurred in studies in which adults (the child's mother usually, but sometimes a teacher) watch with the child. However, beyond the preschool years, one can say very little about the effectiveness of programs designed to teach.

By far, the majority of evidence regarding television as a teacher arises from studies assessing the impact of programing billed not as educational but as entertainment. The current content of this programing (which comprises most of television fare) is such that research designed to assess its educational impact has been conducted from an essentially negative standpoint, i.e., do children learn from this violent fare? I have avoided documenting the details of the evidence on this question because it has been the focus of so many other reviews, but as was the case for educational television, the evidence is fairly clear, although in this instance one is inclined to say it is discouraging. The aggressive behavior of children and adults does indeed increase following exposure to aggressive content. And in at least one study (Joy et al. 1977), aggressive content was

defined merely as normal viewing of regular television fare, content (CBC in Canada) shown to contain less aggression than that of the three major U.S. networks (Williams et al. 1977). Even in a study with the weakest definition of exposure to aggression, a change in children's natural, aggressive play behavior was apparently maintained over a long-term period (2 years).

Developmental differences in the role that regular programing plays in teaching children depend to some extent on viewing patterns. Comstock et al. (1978) have summarized the results of several studies. Children in North America begin viewing television at a very early age. There is a gradual increase in daily hours of viewing from about age 2 to the level of more than 2 hours per day at age 4, followed by a slight dip at age 6 (school takes time away from the set); an increase to more than 3 hours per day at age 9, a further increase to almost 4 hours per day at 11-13 years, and then a gradual decline during adolescence to slightly over 3 hours per day at age 20. These, of course, are means (or means from several studies), and there are wide individual differences in viewing habits.

Developmental differences in the role of television as teacher also vary according to age differences in program preferences. According to Comstock et al. (1978), children express program preferences almost as soon as they begin to view television. During the preschool years, cartoons, situation comedies, and nonanimated children's programs are preferred. Beginning in about grades one or two, situation comedies become favorites, and remain so until adolescence. By the end of elementary school, action/adventure, music and variety, and dramatic programs are cited on preference lists, and by the middle teens, adult shows dominate. News viewing begins early in adolescence and increases through high school but is never dominant.

The drop in hours of viewing during adolescence includes a decline in viewing violent programs, but the proportion of programs watched which contain violence increases, as does preference for violent programs, especially among boys (Lyle and Hoffman 1972).

Stein and Friedrich (1975b) summarized the effects of real television content (as opposed to lab-constructed films) on the behavior of children at different points in development. For studies conducted in early childhood, cartoons have been used most often; Stein and Friedrich concluded that in general the evidence indicates that violent cartoons instigate young children to behave aggressively on a short-term basis. Repeated exposure either increases or maintains initial effects. All of the studies reviewed by Stein and Friedrich (1975b) of the middle childhood years were short-term, laboratory based experiments and most used

contrived measures of aggression. The results of these studies indicate that behavioral expression of aggression is more likely in middle childhood to be moderated by situational and personality variables.

In our long-term field study (Joy et al. 1977), using observations of natural verbal and physical aggressive behaviors, an increase in aggressive behavior occurred for both boys and girls and for children initially high, medium, and low in aggression relative to their peers. Almost all of the studies of adolescents reviewed by Stein and Friedrich (1975b) were conducted only on males and carried out in conditions shown in studies of children in the middle years to be most likely to instigate aggression. The results of this research on adolescent males indicates that filmed violence leads to an increase in aggressive behavior in the laboratory and in field studies when deprivation of preferred viewing is controlled.

Despite the enormous amount of research already conducted on the relationship between televised violence and aggressive behavior, there are still some real gaps in our knowledge. As long as television continues to depict aggression and violence in large quantities (and Gerbner's annual violence profiles indicate an increase, if anything), we need to know more about how viewers are affected by it. The mechanisms by which people learn from television are still not fully understood. Social learning theory provides the best account to date, but Comstock et al. (1978) have also offered a hypothesis worth investigating, namely the role of arousal in the learning process (and the role of television in relation to arousal). They provide an interesting, complex model of the psychology of behavioral effects of television, including many suggestions for future research.

As Stein and Friedrich (1975b) have pointed out, "Virtually all of the research on television content and behavior limits the definition of violence to physical injury or damage. The verbal abuse, aggressive humor, and control over other people by threat or imperative that are so prevalent on television are not included in most investigations" (p. 190). This is an important issue for several reasons. First, situation comedies, which contain high levels of verbal aggression, are extremely popular with children over a fairly wide age range. Second, although Gerbner has so far documented steady increases in the level of physical violence in television drama, this may not continue if current trends in programing hold up. It appears on the surface, to an outsider, that the industry is shifting its focus away from action and adventure to sex and situation comedies. The latter may contain high levels of aggression which will not be picked up by Gerbner's content analyses because his definition of violence is restricted to physical aggression.

When we carried out our content analysis of entertainment television programing (Williams et al. 1977), we distinguished between physical and other forms of aggression: verbal abuse, threats (verbal and gestural),

passive-aggressive behavior (relatively rare), blackmail, extortion, kidnaping, etc. We analyzed our data by program category and found that when a broader definition of aggression was used, situation comedies contained as much aggression as crime dramas. An average of 40 percent of the incidents in situation comedies contained an aggressive act, compared with about 30 percent of the incidents in crime dramas. As expected, the aggression in the latter programs was almost all physical, and in the former, verbal. The impact of the aggression in situation comedies on children's attitudes and behavior has not been studied. It is interesting, however, that in our study of children's aggressive behavior in the three towns in our natural experiment, a substantial increase in aggression occurred in the town without television, following the arrival of CBC television. CBC programming includes only two crime dramas per week, Police Story and a Canadian produced program, Sidestreet. The latter is designed to be relatively low in aggressive content (as crime dramas go) and was found to contain about half the mean level of aggression in the U.S.-produced crime dramas in our sample. Thus, according to the definition of violence or aggression used in most studies of the impact of television on children's aggressive behavior, CBC television is not high in aggressive content. One wonders how much is enough; the mechanisms whereby television and aggression are related; and how children's attitudes and behavior are affected by nonphysical aggression depicted on television, especially in situation comedies.

In summarizing evidence regarding television as an agent of socialization, Comstock et al. (1978) noted that fewer than 50 of the hundreds of studies have taken a developmental perspective. Thus it is probably premature to give an answer to the question, At what ages is television most effective as a teacher? Tentatively, based on the evidence to date, I would conclude that the greatest impact is on the very young. This same conclusion seems to have been reached by Murray (1976), Stein and Friedrich, (1975b), and Comstock et al. (1978). Comstock et al. pointed out that very young children are more likely to comprehend specific behaviors observed but not the contingencies (motives and consequences) surrounding them, less likely to have internalized controls, and less likely to have alternative behaviors in their repertoire. These statements imply that the behavior being acquired is negative rather than positive and underscore the lack of prosocial educational material on television.

Finally, Comstock et al. (1978) noted that television is only one of many socialization sources for children. The effects of television on children at different stages of development are more likely to be understood if a multiple interaction model is used in research, rather than an assumption that television's impact on the child is necessarily direct. It has occurred to me that one indirect way in which children may be influenced by television is through the absence of socialization by their parents which would occur if television were not being used as a babysitter.

Final Thoughts Regarding Television as Teacher

Developmental research on learning from television would be greatly facilitated by a bank of video tapes that has been carefully content analyzed, as Stein and Friedrich (1975a) have suggested. Developmental research is time consuming and frustrating to conduct. One has to get access to the children; young ones can't be tested in groups; it's hard to find tasks or questions applicable across wide age ranges, etc. Unless one has a very large research program and a lot of money, one cannot also carry out expensive content analyses which require special equipment, techniques, etc. Using our coding scheme, a 1-hour program took one person 16 hours to analyze (Williams, et al. 1977). In Gerbner's work, each program has been coded by a total of four people (two teams of two each, with reliability calculated between the teams). Personnel, equipment, and video tape costs are very high. It is perhaps not surprising, therefore, that, aside from Gerbner's work, few content analyses have been done. A bank of content-analyzed video tapes would be extremely useful in facilitating needed developmental research on television.

My second final thought has to do with the apparent lack of research on uses of television for second-language learning. There have been a few such studies (e.g., using Carascalindas), but very few, perhaps because there are few such programs. This question may be of special interest to me because Canada is (technically at least) bilingual. There are good audiovisual aids for teaching French (e.g., Voix et Images) and probably for other languages as well, but I did not locate research on them. In some cities in North America, television programing exists in a language other than English (e.g., in Vancouver, one channel broadcasts only in French). What is the impact of that on young children? There are at least two broad questions that strike me as worth investigating: (1) What is the role of television programing in a subculture language on children of that subculture and on children of the mainstream culture; and (2) what is the impact on subculture children of programing based on the language of the mainstream culture? Again, these questions may seem more pertinent to me because in Vancouver 40 percent of the children in the public schools do not have English as their first language. However, I suspect the questions are relevant in the United States as well. Although phrased in terms of language, these questions might also be viewed more broadly in terms of the general socialization and knowledge obtained by subculture members about their own and about the mainstream culture, and perhaps other subcultures, and vice-versa.

REFERENCES

- Ball, S., and Bogatz, G.A. The First Year of Sesame Street: An Evaluation. Princeton,: Educational Testing Service, 1970.
- Bandura, A. Social Learning Theory. New York: General Learning Press, 1971.
- Bandura, A. Aggression: A Social Learning Analysis. Englewood Cliffs: Prentice-Hall, 1973.
- Barkley, R.A.; Ullman, D.G.; Otto, L.; and Brecht, J.M. The effects of sex typing and sex appropriateness of modeled behavior on children's imitation. Child Development, 48: 721-725, 1977.
- Bechtel, R.B.; Achelpol, C.; and Akers, R. Correlates between observed behavior and questionnaire responses on television viewing. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior. Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off. 1972, p. 274-344.
- Belson, W.A. "Television Violence and the Adolescent Boy." Paper presented to the meeting of the British Association for the Advancement of Science, Birmingham, England, September 1977.
- Beuf, A., Doctor, lawyer, household drudge. Journal of Communication, 24:142-145, 1974.
- Bogatz, G.A., and Ball, S.J. The Second Year of Sesame Street: a Continuing Evaluation. Princeton: Educational Testing Service, 1971.
- Brown, A.L. The Construction of temporal succession by preoperational children. In: Pick, A.D., ed. Minnesota Symposia on Child Psychology. Vol. X. Minneapolis: University of Minnesota Press, 1976.
- Bryan, J.W., and Luria, Z. Sex-role learning: A test of the selective attention hypothesis. Child Development, 49:13-23, 1978.
- Childers, P.R., and Ross, J. The relationship between viewing television and student achievement. Journal of Educational Research, 66:317-319, 1973.
- Collins, W.A. Learning of media content: A developmental study. Child Development, 41:1133-1142, 1970.
- Collins, W.A. Effect of temporal separation between motivation, aggression, and consequences: A developmental study. Developmental Psychology, 8:215-221, 1973.

- Collins, W.A.; Berndt, T.V.; and Hess, V.L. Observational learning of motives and consequences for television aggression: A developmental study. Child Development, 65:799-802, 1974.
- Comstock, G.; Chaffee, S.; Katzman, N.; McCombs, M.; and Roberts, D. Television and Human Behavior. New York: Columbia University Press, 1978.
- Corder-Bolz, C.R., and O'Bryant, S. Teacher vs. program. Journal of Communication, 28:97-103, 1978.
- Corteen, R.S. Television and reading skills. In: Williams, T.M. The Impact of Television: A Natural Experiment Involving Three Communities. Symposium presented at meeting of the Canadian Psychological Association, Vancouver, B.C., June 1977.
- DeFleur, M.L., and DeFleur, L.B. The relative contribution of television as a learning source for children's occupational knowledge. American Sociological Review, 32:777-789, 1967.
- Dominick, J.R., and Greenberg, B.S. Attitudes toward violence: The interaction of television exposure, family attitudes, and social class. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. pp. 314-335.
- Doob, A.N., and Macdonald, G.E. The news media and perceptions of violence. In: Report of the Ontario Royal Commission on Violence in the Communications Industry, Vol. V, 171-226.
- Drozdal, J.G., Jr., and Flavell, J.H. A developmental study of logical search behavior. Child Development, 46:389-393, 1975.
- Edgar, P. Families without television. Journal of Communication, 27:73-77, 1977.
- Flerx, V.C.; Fidler, D.S.; and Rogers, R.W. Sex role stereotypes: Developmental aspects and early intervention. Child Development, 47:998-1007, 1976.
- Fouts, G. Effects of television on children and youth: A developmental approach. In: Report of the Ontario Royal Commission on Violence in the Communications Industry, Vol. VI. Toronto, 1977. pp. 1-124.

- Friedrich, L.K., and Stein, A.H. Aggressive and prosocial television programs and the natural behavior of preschool children. Monographs of the Society for Research in Child Development, 38 (4): Serial No. 151, 1973.
- Frueh, T., and McGhee, P. Traditional sex role development and amount of time spent watching television. Developmental Psychology, 11:109, 1975.
- Furu, T. Television and Children's Life: A Before-After Study. Tokyo: Japan Broadcasting Corporation, 1962.
- Galst, J.P., and White, M.A. The unhealthy persuader: The reinforcing value of television and children's purchase-influencing attempts at the supermarket. Child Development, 47:1089-1096, 1976.
- Gerbner, G., and Gross, L. Living with television: The violence people. Journal of Communication, 26:173-199, 1976.
- Gerbner, G.; Gross, L.; Eleey, M.F.; Jackson-Beeck, M.; Jeffries-Fox, S.; and Signorielli, N. TV violence profile no. 8: The highlights. Journal of Communication, 27:171-180, 1977.
- Gerson, W.M. Mass media socialization behavior: Negro-white differences. Social Forces, 45:40-50, 1966.
- Gorn, G.J.; Goldberg, M.E.; and Kanungo, R.N. The role of educational television in changing the intergroup activities of children. Child Development, 47:277-280, 1976.
- Greenberg, B.S. Children's reactions to TV blacks. Journalism Quarterly, 49:5-14, 1972.
- Greenberg, B.S. Gratifications of television viewing and their correlates for British children. In: Blumler, J., and Katz, E., eds. The Uses of Mass Communications: Current Perspectives on Gratification Research. Sage Annual Review of Communication Research, Vol. III. Beverly Hills.: Sage, 1974. pp. 71-92.
- Greenberg, B.S., and Reeves, B. Children and the perceived reality of television. Journal of Social Issues, 32, 1977.
- Grusec, J. The effects of co-observer evaluation on imitation: A developmental study. Developmental Psychology, 8:141, 1973.

- Hagen, J.W., and Hale, G.A. The development of attention in children. In: Pick, A.D., ed. Minnesota Symposia on Child Psychology. Vol. VII. Minneapolis: University of Minnesota Press, 1973.
- Hale, G.A.; Miller, L.K.; and Stevenson, H.W. Incidental learning of film content: A developmental study. Child Development, 39:69-77, 1968.
- Harrison, L.F., and Williams, T.M. Television and cognitive development. In: Williams, T.M. The Impact of Television: A Natural Experiment Involving Three Communities. Symposium presented at meeting of the Canadian Psychological Association, Vancouver, B.C., June 1977.
- Hartmann, P., and Husband, C. Racism and the Mass Media. London: Davis-Poynter, 1974.
- Hawkins, R.P. Learning of peripheral content in films: A developmental study. Child Development, 44:214-217, 1973.
- Hicks, D.J. Effects of co-observer's sanctions and adult presence on imitative aggression. Child Development, 38:303-309, 1968.
- Himmelweit, H.T.; Oppenheim, A.N.; and Vince, P. Television and the Child. London: Oxford University Press, 1958.
- Himmelweit, H., and Swift, B. Principles of continuities and discontinuities in media usage and taste: A longitudinal study of adolescents reexamined at ages 25 and 33. Journal of Social Issues, 32, 1977.
- Huston-Stein, A. "Television and Growing Up: The Medium Gets Equal Time." Invited address to Divisions 15 and 17 of the American Psychological Association, San Francisco, August 1977.
- Johnstone, J.W.C. Social integration and mass media use among adolescents: A case study. In: Blumler, J.G., and Katz, E., eds. The Uses of Mass Communications: Current Perspectives on Gratification Research. Beverly Hills: Sage, 1974. pp. 35-47.
- Joy, L.A.; Kimball, M.M.; and Zabrack, M.L. Television exposure and children's aggressive behaviour. In: Williams, T.M., (Ch.). The Impact of Television: A Natural Experiment Involving Three Communities. Symposium presented at meeting of the Canadian Psychological Association, Vancouver, B.C., June 1977.

- Katzman, N.E. Violence and color television: What children of different ages learn. In: Comstock, G.A.; Rubinstein, E.A.; and Murray, J.P., eds. Television and Social Behavior. Vol. V. Television Effects: Further Explanations. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. pp. 253-308.
- Klapper, J.T. Mass communication research: An old road resurveyed. Public Opinion Quarterly, 27:515-527, 1963.
- Kun, A. Evidence for preschoolers' understanding of causal direction in extended causal sequences. Child Development, 49:218-222, 1978.
- Leifer, A.D.; Collins, W.A.; Gross, B.M.; Taylor, P.H.; Andrews, L.; and Blackmer, E.R. Developmental aspects of variables relevant to observational learning. Child Development, 42:1509-1516, 1971.
- Leifer, A.D., and Roberts, D.F. Children's responses to television violence. In: Murray, J.P.; Rubinstein, E.A.; and Comstock, G.A., eds. Television and Social Behavior. Vol. II. Television and Social Learning. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off. 1972. pp. 43-180.
- Lesser, G.S. Children and Television: Lessons From Sesame Street. New York: Random House, 1974.
- Levin, S.R., and Anderson, D.R. The development of attention. Journal of Communication, 26(2):126-135, 1976.
- Liebert, R.M.; Neale, J.M.; and Davidson, E.S. The Early Window: Effects of Television on Children and Youth. New York: Pergamon, 1973.
- Lyle, J. Television in daily life: Patterns of use overview. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior. Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. pp. 1-32.
- Lyle, J., and Hoffman, H.R. Children's use of television and other media. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior. Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. pp. 345-394.

- Maccoby, E.D. Why do children watch television? Public Opinion Quarterly, 18:239-244, 1954.
- Macnamara, J.; Baker, E.; and Olson, C.L. Four-year-olds' understanding of pretend, forget, and know: Evidence for propositional operations. Child Development, 47:62-70, 1976.
- McLeod, J.N.; Atkin, C.K.; and Chaffee, S.H. Adolescents, parents, and television use: Adolescent self-report measures from Maryland and Wisconsin samples. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior. Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. pp. 173-238.
- Meline, C.W. Does the medium matter? Journal of Communication, 26(3): 81-90, 1976.
- Milavsky, J.R.; Pekowsky, B.; and Stipp, H. TV drug advertising and proprietary and illicit drug use among teenage boys. Public Opinion Quarterly, 39:457-481, 1975.
- Miller, M.M., and Reeves, B. Dramatic TV content and children's sex-role stereotypes. Journal of Broadcasting, 20:35-50, 1976.
- Murray, J.P. Television in inner-city homes: Viewing behavior of young boys. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior. Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. pp. 345-394.
- Murray, J.P. Television and children: Some problems in studying the impact of televised violence. In: Television and Socialization Research Reports. North Ryde, Australia: Macquarie University, 1976.
- Murray, J.P., and Kippaz, S. Children's social behavior in three towns with differing television experience. Journal of Communication, 28:19-29, 1978.
- Pick, A.D.; Frankel, D.G.; and Hess, V.L. Children's attention: The development of selectivity. In: Hetherington, E.M.; Hagen, J.W.; Kron, R.; and Stein, A.H., eds. Review of Child Development Research. Vol. V. Chicago: University of Chicago Press, 1975. pp. 325-386.

- Poulos, R.W. Television's prosocial effects: A positive look at the medium. Journal of Social Issues, 32, 1977.
- Prasad, V.K.; Rao, T.R.; and Sheikh, A.A. Mother vs. commercial. Journal of Communication, 28:91-96, 1978.
- Riley, M.W., and Riley, J.W. A sociological approach to communication research. Public Opinion Quarterly, 15:444-460, 1951.
- Roberts, D.F. The nature of human communication effects. In: Schramm, W., and Roberts, D.F., eds. The Process and Effects of Mass Communication. Urbana, Ill.: University of Illinois Press, 1971. pp. 347-387.
- Robertson, T.S., and Rossiter, J.R. Children's responsiveness to commercials. Journal of Communication, 27:101-106, 1977.
- Rubinstein, E.A.; Liebert, R.M.; Neale, J.M.; and Poulos, R.W. "Assessing Television's Influence on Children's Prosocial Behavior." Occasional paper 74-11. Stony Brook, N.Y.: Brookdale International Institute, 1974.
- Rule, B., and Duker, P. The effects of intention and consequences on children's evaluation of aggressive acts. Journal of Personality and Social Psychology, 27:184-190, 1973.
- Salomon, G. Internalization of filmic schematic operations in relation to individual differences. Journal of Educational Psychology, 66:499-511, 1974.
- Salomon, G. Cognitive skill learning across cultures. Journal of Communication, 26(2):138-144, 1976.
- Salomon, G. Effects of encouraging Israeli mothers to co-observe "Sesame Street" with their five-year-olds. Child Development, 48:1146-1151, 1977.
- Schramm, W.; Lyle, J.; and Parker, E.B. Television in the Lives of Our Children, Stanford, Ca.: Stanford University Press, 1961.
- Shirley, K.W. "The Prosocial Effects of Publicly Broadcast Children's Television." Unpublished doctoral dissertation, University of Kansas, 1974.

- Shultz, T.R., and Butkowsky, I. Young children's use of the scheme for multiple sufficient causes in the attribution of real and hypothetical behavior. Child Development, 48:464-469, 1977.
- Shultz, T.R., and Mendelson, R. The use of covariation as a principal of causal analysis. Child Development, 46:394-399, 1975.
- Singer, J.L., and Singer, D.C. Can TV stimulate imaginative play? Journal of Communication, 26(3):74-80, 1976.
- Stein, A.H., and Friedrich, L.K. The effects of television content on young children. In: Pick, A.D., ed. Minnesota Symposia on Child Psychology. Vol. IX. Minneapolis: University of Minnesota Press, 1975a.
- Stein, A.H., and Friedrich, L.K. The impact of television on children and youth. In: Hetherington, E.M.; Hagen, J.W.; Kron, R.; and Stein, A.H. Review of Child Development Research. Vol. V. Chicago: University of Chicago Press, 1975b. pp. 183-256.
- Tolley, H., Jr. Children and War: Political Socialization to International Conflict. New York: Teachers College Press, Columbia University, 1973.
- Wackman, D.C.; Wartella, E.; and Ward, S. Learning to be consumers: The role of the family. Journal of Communication, 27:138-151, 1977.
- Wade, S.E. Adolescents, creativity, and media: An exploratory study. American Behavioral Scientist, 14:341-351, 1971.
- Ward, S., and Wackman, D.B. Family and media influences on adolescent consumer learning. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior. Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs. U.S. Govt. Print. Off., 1972a. pp. 554-567.
- Ward, S., and Wackman, D.B. Television advertising and intra-family influence: Children's purchase influence attempts and parental yielding. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior. Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972b. pp. 516-525.
- Wartella, E., and Ettema, J.S. A cognitive developmental analysis of young children's attention to television commercials. Journal of Communication, 69-88, 1974.

Williams, T.M.; Zabrack, M.L.; and Joy, L.A. A content analysis of entertainment television programming. In: Report of the Ontario Royal Commission on Violence in the Communications Industry. Vol. III. Toronto, 1977. pp. 1-155.

Wright, J.C., and Vlietstra, A.G. The development of selective attention: From perceptual exploration to logical search. In: Reese, H.W., ed. Advances in Child Development and Behavior. Vol. X. New York: Academic Press, 1975, pp. 196-239.

Zuckerman, P.; Ziegler, M.; and Stevenson, H.W. Children's viewing of television and recognition memory of commercials. Child Development, 49:96-104, 1978.

Chapter 5. TELEVISION AND SOCIAL VALUES

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The most significant development in recent years in the study of the influence of the mass media has been the return to a flirtation with the hypothesis of major effects. This is the result of an accumulation of findings and a shift in perspective with regard to what should be thought of as an important effect. The change is visible in renewed interest in the mass media on the part of social scientists and in varied guises in areas such as politics, the psychology of audiovisual stimuli and behavior, and the socialization of children (Comstock and Lindsey 1975). One prominent observer (Katz 1977) speaks of a "renaissance" in communications research.

The principal factors responsible for this new emphasis in the case of the socialization of children are the demonstration within a laboratory setting of unambiguous media effects, the widening of the investigatory horizon by the National Institute of Mental Health research program associated with the Surgeon General's study of television violence, and greater acceptance of the proposition that quantitatively small effects may represent outcomes of great social significance. The initial significant date in the shift is 1963 when two experiments were published in a well-known psychological journal. Bandura, Ross, and Ross (1963a) demonstrated that aggressive behavior on the part of nursery school children was greater after viewing television portrayals of either ordinarily clothed adults or of a costumed cat lady attacking a Bobo doll. Berkowitz and Rawlings (1963) demonstrated that college-age subjects became more punitive after viewing a prize fight film said to depict the just punishment of a scoundrel. These demonstrations of media effects began to alter the prevailing assumptions among social and behavioral scientists about the impact of the media. The extensive assessments of television's early influence on children in England and the United States by Himmelweit et al. (1958) and by Schramm et al. (1961) had not offered evidence of such clear cut behavioral effects. These investigations provided theoretical formulations and a body of data still relevant in many respects today, but they did not appear to contradict the prevailing view of minimal media effects (Comstock et al. 1978). This perspective, perhaps best exemplified in the theoretical framework offered by Klapper (1957, 1960, 1963) that held reinforcement of existing propensities as the primary outcome, did not so much deny effects as treat them so that they were generally thought of as unimportant. The Bandura and Berkowitz experiments, although in many ways very different from each other, began a revisionism that was reinforced by later investigations.

The research accomplished for the Surgeon General's study (Comstock and Rubinstein 1972a, 1972b; Comstock et al. 1972; Murray et al. 1972; Rubinstein et al. 1972) made two major contributions. It enhanced the apparent validity for real-life behavior of the experimental evidence on violent portrayals by providing correlational evidence consistent with the hypothesis that violence viewing increases aggressiveness (Chaffee 1972a, 1972b; Comstock 1976), and it altered the perceived topography of communications studies. The consequences of the first was to increase belief among investigators that media effects merit attention. The second derives partly from these confirmatory findings and partly from certain emphases of the research which made a number of issues and topics newly prominent. They include the implications of the violence research for other kinds of behavior and for the psychological processes involved in behavioral effects, the degree of guidance that television provides in daily thought and behavior, and the importance of maturational changes for these varied media influences (Comstock 1972; Leifer et al. 1973).

The acceptance of the proposition that quantitatively small media effects may have major social import is continuing to grow. The most obvious example is the election of a President by a small and perhaps transient margin, as occurred in 1960 (Kennedy-Nixon), 1968 (Nixon-Humphrey), and 1976 (Carter-Ford). In such circumstances, any election-day advantage evolving from television represents a major effect. It would be a serious error to believe that such a phenomenon is confined to politics. As Milgram and Shotland (1973) point out in reflecting on the null results of their field experiments on television and antisocial behavior, a rate of effects far below that detectable by their experimental method could constitute serious social disruption. Airline bomb threats and other hostile acts apparently imitative of televised accounts are an illustration (Bandura 1973). Different in kind, but alike in supporting the proposition, are effects that alter the level or distribution of important social attributions, such as interpersonal aggressiveness, reading skills, and the acceptance or rejection of norms. What we have, then, are at least three circumstances in which small is important: effects that tip the social balance, as in elections; effects whose rarity fails to divest them of impact; and effects that alter prominent aspects of the societal profile.

The research on children's learning of values, attitudes, and behavior from television is inextricably intertwined with the reemergence of the concept of major media effects. The skepticism over the importance of media impact is traceable to the failure of studies of presidential elections in the 1940s and 1950s to find voter choice much influenced by mass media exposure (Lazarsfeld et al. 1944; Berelson et al. 1954; Campbell et al. 1954; Simon and Stern 1955; Berelson and Steiner 1964; Comstock et al. 1978). The theoretical framework that consigned effects

to minor change or reinforcement (Klapper 1960), unless they represented a reversal of prior thought or behavior or seemed inconsistent with personal attributes, increased the acceptance or such skepticism. What the television violence experiments offered was not simply the demonstration of short-term communication effects, which had been amply demonstrated by attitude-change experiments (Hovland 1954, 1959) but the demonstration of altering a class of behavior--aggressiveness--of acknowledged social importance. Much of the research that followed, including that under the Surgeon General's program, has focused on children or adolescents, and the protectionism that society extends to them has encouraged the view that small effects may have major import.

BEHAVIOR

Bandura (1969, 1973) has proposed that television is a source of vicarious socialization that to some degree has replaced more traditional agents--home, school, and church. There are at present no data that would allow us to assign relative importance to the various alleged agents of socialization. The hypothesis of socialization by television rests principally upon the demonstration that portrayals can alter subsequent behavior.

Most of the evidence on television's behavioral influence concerns the effects of television violence on aggression. However, the theoretical formulations employed to explain such outcomes, along with a small amount of evidence regarding other kinds of effects, suggest that the range of behavior open to influence is broader than aggressiveness.

Several studies have provided positive correlations between everyday violence viewing and everyday aggressiveness (McLeod et al. 1972b; Lefkowitz et al. 1972, 1977; McIntyre and Teevan 1972; Chaffee 1972a). These studies also provide evidence that this association is not explained by the preference of more aggressive youths for violent entertainment and persists when such variables as age, socioeconomic status, school performance, and total viewing time are taken into account (McLeod et al. 1972a; Chaffee 1972a; Eron et al. 1972).

Lefkowitz et al. (1972, 1977) argue that their longitudinal data constitute "compelling evidence that there is a probably causative influence of watching violent television programs in early years on a boy's later aggressiveness" (1977, p. 126). Even if their conclusion is judged to exceed the power of their data, as many have argued (Kaplan 1972; Howitt 1972; Kay 1972), the data add importantly to the evidence by supplying positive correlations between violence viewing and aggression which span a decade (Chaffee 1972a, 1972b).

In sum, these correlational studies supply evidence of a positive association in real life between exposure to a class of media content and behavior on the part of young people. The experiments make possible the inference that media exposure can be a cause of increased aggression, and they supply a number of plausible psychological mechanisms for such an outcome. Together, the correlational and experimental studies make a case for the behavioral influence of television for which neither alone would be sufficient.

The social learning theory of Bandura (1969, 1973) posits that behavior can be acquired by observing others, without performance or reinforcement. A corollary is that film or television portrayals may have an influence similar in kind to those of live experience. Numerous laboratory-type experiments demonstrate that children of nursery school age conform to these propositions. Bandura, Ross, and Ross (1961) found that the aggressive behavior of adult models would be imitated. Their 1963a experiment demonstrated that media portrayals, including simulated cartoon fantasy involving a cat lady, could also lead to imitation. In a subsequent experiment, the same authors (1963b) found that a television portrayal of triumphant aggression was more likely to be imitated than a portrayal of aggression that was punished or of nonaggressive behavior, and the children who saw the victorious attack were more likely to express criticism of the victim. Bandura (1965) then demonstrated that acquisition of the responses occurs as a result of observation, although performance may be inhibited by various factors. In this instance, initial differences in which imitative aggression was least when a portrayed perpetrator was punished disappeared when children were offered a reward for imitating the perpetrator. One implication of these varied findings is that differences in performance in part hinge on attributes of the portrayed performance. Rosekrans (1967) may be construed as elaborating on those attributes, showing that imitation increased when the portrayal of a person was depicted as more similar to the viewer.

The facilitation or disinhibition theory of Berkowitz (1962, 1964, 1973) holds that television and film portrayals of violent behavior can alter subsequent aggressiveness on the part of viewers by changing the elicitory potential of environmental cues or the meaning attached to aggressive behavior itself. The finding that college-age subjects became more punitive after viewing aggression depicted as justified (Berkowitz and Rawlings 1963; Meyer 1972) is merely the first in a series of experiments concerned with the factors upon which increases in aggression subsequent to viewing a violent portrayal may be contingent. Several demonstrate that punitiveness is increased when the portrayal contains a cue, such as the name of the victim, that matches that of the target whom angered subjects have the opportunity to aggress against (Berkowitz and Geen 1966, 1967; Geen and Berkowitz 1967). Two experiments (Geen and Stonner 1972; Berkowitz and Alioto 1973) demonstrate that depictions of violence characterized as motivated by an intent to injure increase the punitiveness of viewers. Two others (Feshbach 1972; Berkowitz and Alioto 1973) also demonstrate that portrayals of aggression labeled or perceived as realistic rather than imaginary increase the punitiveness of viewers.

There are several theoretical formulations that hold that exposure to television or film portrayals of violence will reduce the aggressiveness of viewers. The catharsis hypothesis, derived from Aristotle's argument that fear and pity are purged by attending to tragedy in drama, asserts that vicarious participation in aggression will reduce aggressive drive (Feshbach 1969; Comstock et al. 1978). Feshbach (1961) found that angered college-age subjects engaged in less hostile imagery after viewing a violent portrayal; Berkowitz and Rawlings (1963) argued that the outcome which Feshbach attributed to catharsis was the result of heightened anxiety over aggression. Such anxiety, they reasoned, would lead to the inhibiting of aggressive responses, and they supported their case with the evidence that when inhibitions were lowered by the presentation of a justified target for aggression, the observation of violence increased rather than decreased punitiveness. The frequency with which subsequent experiments have demonstrated increased aggressiveness following exposure to violent portrayals eliminates the possibility that catharsis is the typical outcome of viewing the kinds of portrayals so far subjected to scrutiny. The formulation of Berkowitz and Rawlings suggests, as Geen and Quanty (1977) conclude in their recent review, that when exposure to a violent portrayal is followed by a decline in aggressiveness, the explanation is most likely the inhibition of aggressive responses as the result of the heightening of anxiety over aggression. A third view, that violent portrayals may reduce subsequent aggressiveness by providing the substance of self-generated fantasy whose deployment will wholly or partly substitute for behavior (Feshbach and Singer 1971), is so far little investigated but merits serious attention.

The arousal hypothesis holds that the excitatory character of television and film portrayals can enhance the display of whatever behavior may be appropriate (Tannenbaum 1971, 1972; Tannenbaum and Zillmann 1975). Zillman (1971) demonstrated that an erotic portrayal could evoke greater punitiveness among college-age subjects than a violent portrayal, although the violent portrayal did increase punitiveness. Zillmann, Johnson, and Hanrahan (1973) demonstrated that a violent sequence with a happy ending evoked less punitiveness than the same sequence without one. The question raised by these and other demonstrations that audiovisual stimuli may lead to physiological arousal and through its excitatory capacity alter behavior (Zillmann and Johnson 1973; Zillmann et al. 1974) is whether arousal, rather than the violent content, explains the increases in aggressiveness that have been observed after exposure to violent portrayals. The answer is that it may be a partial explanation but is unlikely to be sufficient. It does not bear on the question of acquisition of aggressive responses, and it does not explain why perceived reward for a perpetrator, environmental cues, or characterizations of the portrayed violence as malevolent or justified should affect the impact of portrayals, unless one chooses to believe that these factors manipulate arousal.

The findings of Berkowitz and Geen (1966) that a violent sequence did not elicit greater aggression than a high-action sports sequence is consistent with an arousal explanation; however, the finding in the same experiment that aggression was increased by the similarity of cues between film victim and real-life target is not. There is also the finding of Krull and Watt (1973) that aggressiveness among adolescents correlates independently with both prior violence viewing and prior exposure to action-filled programming, when program action is measured independently of violent content. We are led, then, to the proposition that audiovisual stimuli may alter behavior through physiological arousal, but we are not led to the conclusion that this property accounts in entirety for the contribution of violent portrayals to aggressiveness.

Some writers (Kaplan and Singer 1976) have emphasized the role of frustration or provocation of subjects as a necessary condition for the appearance of media-enhanced aggressiveness. While it is possible to cite experiments in which frustration or provocation were not employed (Liebert and Baron 1972), the more reasonable question is whether the manipulated sensitivity exceeds that which one would find frequently in everyday life. The answer is that it does not. We have insult and the delivery of mild electric shock, and we have the denial of access to desirable toys; none of these would appear to transcend the ordinary abrasiveness of human interaction.

The findings lead us to advance some general principles regarding the influence of television portrayals on the behavior of young persons. They suggest that portrayals may influence behavior through the acquisition of new responses or through altering the likelihood of the performance of newly or previously acquired responses. Such alteration may occur through the changing of expectations regarding the outcome of behavior, through identification with the perpetrator of an act, by raising or lowering inhibitions, by changing the elicitory potential of environmental cues, and by assigning certain meanings to a class of behavior.

These principals as stated are independent of the class of behavior under investigation. It would be a serious mistake to assume that any or all kinds of behavior are equally subject to influence within the confines of a laboratory setting or that there will always be positive correlations between exposure and behavior to encourage an inference of media impact outside the laboratory. Nevertheless, it would be a more serious error to treat the findings as exclusive to aggression or punitiveness. What they offer are propositions to be qualified in regard to the breadth of their applicability as findings about other kinds of behavior accumulate.

The findings on the effects of television and film portrayals on rule violation by children are consistent with this view of broad applicability. The two types of rule violation that have been investigated are the failure

to adhere to a standard of performance and deviation from some stipulation with regard to play. This area of investigation has implications for the everyday welfare of children because acts harmful to self or others frequently involve the departure from the admonition of a parent or teacher. Wolf and Cheyne (1972) found that deviation in a portrayal increased the likelihood of subsequent deviation on the part of children. Other experiments have reaffirmed that the likelihood of deviant behavior is increased by a portrayal in which such behavior is rewarded (Walters and Parke 1964) and decreased by a portrayal in which such behavior is punished (Walters et al. 1963). Other findings emphasize the importance of observed behavior as an influence, for while inconsistency between verbal advocacy and behavior in a portrayal has been found to increase the likelihood of deviation (Allen and Liebert 1969; Stein and Bryan 1972), deviant behavior is more likely to do so than advocacy of deviation (Allen and Liebert 1969; Wolf 1973).

One consequence of the Surgeon General's study was to turn attention to the possibility that television portrayals are capable of enhancing the likelihood of various positive or socially desirable forms of behavior. Of course, any kind of behavior, such as aggression, depends on the circumstances and the values introduced by the observer for its classification as desirable or "pro-" or "anti-" social. Nevertheless, there are certain kinds of behavior that in the absence of other information have the endorsement of society, such as sharing, helping, and cooperation. There is so far only a modest amount of evidence on the capability of the medium to enhance such "pro-social" behavior. Drabman and Thomas (1974) demonstrated that readiness to summon help, as instructed, when children's play became violent could be inhibited by exposure to a violent portrayal. Several studies have demonstrated that everyday fears, such as fears of dogs or dentists, can be reduced by portrayals showing a fearless approach to the abhorred stimulus (Bandura and Menlove 1968; Hill et al. 1968; Poulos and Davidson 1971). Delay of gratification, defined in the experiment in question as willingness to forego a small reward in quest of a larger one later, was increased by portrayals both of such behavior and of verbal advocacy in its behalf, with the effect greatest when advocacy and behavior were both included (Yates 1974). Portrayals of the behavior in question similarly have been shown to be capable of increasing affectionate displays toward a doll (Frvear and Thelen 1969; Tasch 1970), sharing (Liebert et al. 1969; Bryan and Walbek 1970; Elliott and Vasta 1970), generosity (Bryan and Schwartz 1971), and helping (Collins 1974; Rubinstein et al. 1974).

Experimental manipulations of portrayals are sometimes criticized for being atypically graphic and demonstrative in comparison to television entertainment. The adult viewer of Saturday morning programming may doubt

its challengeability in such properties, but it is certainly true that the context of experimental manipulation typically is unlike that of the portrayals in ordinary programming. Viewing usually occurs in isolation from other television in a foreign and, to the viewer, possibly exotic environment. We do not dismiss the relevance of such manipulations because the task of the experiment is to test hypotheses about outcomes and the processes by which they may occur, not to reconstruct reality in miniature. However, we are further encouraged to believe that the findings are relevant to television entertainment because the viewing of various actual sequences of programs and whole programs has been demonstrated to affect subsequent behavior. Rubinstein et al. (1974) increased helping by a Lassie episode; Friedrich and Stein (1975) increased cooperation with episodes of Mister Rogers' Neighborhood; Gorn et al. (1976) increased acceptance of racially different playmates by portrayals of racially mixed play groups inserted in Sesame Street; and various investigators have successfully affected subsequent aggressiveness by the use of sequences or whole programs or films of violent entertainment. For example, Berkowitz and Rawlings (1963) employ the film Champion's penultimate prize fight; Liebert and Baron (1972), pistol and knife assaults from television's The Untouchables; Steuer et al. (1971), Saturday morning programs; Parke et al. (1977), the films Champion, The Chase, and Death Rides a Pale Horse.

The principal means by which the various demonstrated effects would appear to be achieved is through the alteration of the value that young viewers place on the acts in question. The departure for this view is the frequency with which reward or nonpunishment for the portrayed behavior enhances the likelihood of performance, whether the class of behavior is aggression (Bandura et al. 1963b), rule adherence (Walters et al. 1963; Walters and Parke 1964), or sharing (Elliott and Vasta 1970). However, it is also consistent with the findings that aggression is encouraged by portrayals in which such behavior is depicted as justified (Berkowitz and Rawlings 1963), realistic (Feshbach 1972), malevolent (Geen and Stonner 1972; Berkowitz and Alioto 1973), or directed against someone reminiscent of a likely real-life target (Berkowitz and Geen 1966), for these are all factors that presumably would alter the young viewer's sense of the appropriateness of such behavior. Of course, we now have deserted the concepts that are instrumental to scientific advance for a more encompassing one that permits us to assign its social importance to the evidence.

It is natural at this point to ask what we know about what television entertainment portrays. We know that the incidence of violent human interaction has remained substantial over the past decade; that the social order is distorted through an emphasis on law enforcement, a high level of risk, and a high proportion of professionals; and that often goals are achieved by socially disapproved means (Gergner and Gross 1976; Comstock 35 et al. 1978). Hyman (1973) has argued that television may teach such

socially desirable responses as empathy for victims and persistence. There is no justification for rejecting such a view. Meyer (1973) reports that a majority of children perceived their favorite television characters to behave in socially desirable ways consistent with their own behavior, although a sizable minority of boys admired violent behavior as a means of problem solution. However, there are some reasons for suspecting that aggression may be more readily taught by television than other classes of behavior (Comstock et al. 1978). These include the greater attention that children give to violent action, the possibility that a socially disapproved class of behavior may be more open to transient redemption than a socially approved class, and the character of physical aggression as involving discrete acts with applicability in a wide range of settings and circumstances.

AUTHORITY

The television experience of young persons in America is inextricably bound up with questions of authority--over the disposition of time, over access to information, and over the exercise of influence. Television has been called a "third parent" (Surlin and Dominick 1970) and a "second teacher" (Comstock 1977); these metaphors, as does the cliché of the set as babysitter, pay tribute to the medium's intrusion into family management.

The posture adopted by parents typically is one of mild concern but little exercise of control, either over amount of viewing or specific programing viewed. The evidence, however, supports the view that parents may exercise considerable influence over the impact of television on their children even after the abrogation of such authority.

A composite of the viewing estimates of a number of studies (Schramm et al. 1961; Chaffee and McLeod 1972; McIntyre and Teevan 1972; McLeod et al. 1972a; Lyle and Hoffman 1972a, 1972b) indicates that by the age of 4, children on the average are viewing about 2 hours a day, an increase from about ½ hour 2 years earlier. Viewing rises through the elementary school years, with a peak of about 4 hours a day at age 12, then declines slightly during the high school and later years. There is considerable individual variation; for example, in a small sample of black boys, viewing over a week varied from 5 to 42 hours (Murray 1972).

Comparisons of findings over the past two decades (Comstock et al. 1978) suggest that the inverse relationships between amount of viewing and measures of cognitive capability, such as IQ and school achievement, and between amount of viewing and family socioeconomic status that were once very prominent may be lessening. Such a shift would testify to television's increasing penetration of society and would find its parallel in the tendency for hours of set use in households of higher socioeconomic status to increasingly approach average consumption over the past two decades. The available data do suggest that black children view more than white

(Greenberg and Dervin 1970). These intellectual, socioeconomic, and racial patterns are probably more pronounced among older children, for it is with age that the circumstances that shape interests begin to play their roles.

A typical motive for the viewing of television is entertainment or diversion. Music, for example, is much more frequently the recourse in periods of emotional upset (Lyle and Hoffman 1972a). This fact should not distract us from taking extraordinary involvement in television or any other medium as a symptom of unsatisfactory relationships with peers or parents or of psychological discomfort (Himmelweit et al. 1958; Schramm et al. 1961; Johnstone 1974; Maccoby 1954).

Program preferences develop almost as soon as viewing begins, soon conform to sex-role differences, and by the mid-teens approximate the viewing preferences of adults (Comstock et al. 1978). The male leaning is for action; the female, for comedy. These differences occur within the broad trend in which, in the early 1970s, the favorites of the preschool and first-grade child were cartoons and comedies, and of the older elementary school child, noncartoon comedies, with action-adventure, music and variety, and general drama becoming more prominent by the time of the transition from elementary to high school. Viewing preferences, of course, are contingent on program availability; the shift in recent years toward situation comedy may somewhat alter this pattern.

The place of the parent in this activity is one of ambivalence; one is reminded of an experimental manipulation in which words and deeds are in opposition. The various studies that have assessed the exercise of parental authority in regard to television viewing (Bower 1973; Chaffee et al. 1970; Greenberg and Dervin 1970; Hess and Goldman 1962; Lyle and Hoffman 1972a, 1972b; McLeod et al. 1972a, 1972b; Stein and Friedrich 1972) provide a picture of parental complaint, atypical action, and a certain trepidation over what television may be teaching children.

The typical circumstance is that parents pay little attention to the amount of time spent viewing and are most likely to set a limit on evening viewing which, in fact, coincides with bedtime. For example, a national survey (Bower 1973) found that only about a third of parents having children 12 years of age and younger said that they "often" restricted total amount of viewing, and in a sample of mothers of first graders in a California suburb about 60 percent said they never imposed restrictions on amount of viewing (Lyle and Hoffman 1972a). Yet, about half the parents in that national sample said that children may "see things they shouldn't," and almost a third said television "keeps them from doing things they should." These concerns more often translate into attempts to restrict viewing of

certain content than restrictions on amount of time spent with television, and the exercise of parental authority with regard to content appears to occur more frequently with specific programs than with a broad category of programs.

However, there is evidence that television is perceived by a substantial proportion of parents as a competitor in influencing their children. This evidence does not consist of the magnitude of a declaration of concern, but of the shift in such declarations that occurs when children reach a susceptible age. One would expect parental restrictions to decline as the child grows older. However, in the data reported by Bower (1973) the proportion asserting that they "often" forbid the viewing of certain programs increases from 39 percent for the parents of children 7-9-years-old to 52 percent for those of children 10-12-years-old. One can rule out the explanation that increasing homework affects parental severity over time use because there is no increase in the restriction of amount of viewing. What is apparently reflected here is a perception by parents that at this age, as children begin to regularly view television that is ostensibly aimed at adults, the images and themes of television drama about occupations, crime, the law, and the way people behave now truly become relevant, for the young viewer soon will be making his own choices about these questions.

In practical terms, however, television appears to be very much within the province of the authority of the child rather than of the parent. We find in the data on program selection (Bower 1973; Wand 1968) that children play such a large role that television could be called the children's medium, with no pejorative intent toward its content. When child and parent disagree, the child will prevail about as often as the adult; when two parents are in disagreement, the child's preference will be decisive. This record of parliamentary efficacy overlooks the instances when child and parents agree or when the child views alone. There is also evidence that among adolescents program preference is unrelated to that of parents and that parents may base program selection on the suggestions of the adolescent (Chaffee et al. 1971; McLeod et al. 1972a, 1972b). The impression is one of great independence, considerable influence, and possibly some degree of esthetic imperialism on the part of the young viewer.

The independence of the child has been augmented by the growth of multiple-set households (Chaffee et al. 1970; LoSciuto 1972; Bower 1973; Comstock et al. 1978). In 1965, Nielsen estimated that about one-fifth of all households had two or more sets. By 1975, the figure was approaching 50 percent. Such figures underestimate the role of multiple-sets in the family because the proportion of households with two or more sets increases with family size. There are three restrictions on the degree to which having multiple sets implies exposure of the child to television that

otherwise would not be viewed. One is the already cited degree to which children's choices rule family decisionmaking. A second is that about half of second sets are in parental bedrooms. The third is the apparent lack of difference--although admittedly there is little evidence on the issue--of similar correlations between parent and child viewing of types of programs in both single-and multiple-set homes. The evidence is nevertheless quite clear that multiple sets result in the separation of the family for much of viewing. In single-set households, about 95 percent of parents say that some joint viewing is "likely"; when there is a second set, the figure drops to 80 percent; when there are three or four sets, to about 65 percent; and when there is more than one set, viewing by children apart from parents and viewing by husbands and wives together become more likely. Thus one of the effects of cheaper television sets is disruption of family patterns.

There is little doubt that one effect of television is to provide children with information. Television achieves this role partly through the status of sole source among mass media; children and adolescents typically do not read newspapers or turn much to magazines (Lyle and Hoffman 1972a; Comstock et al. 1978). Thus, we find that television was a far more important source of information on the Vietnam War for elementary and high school pupils than were either parents or teachers, and television is perceived by young persons as their principal source of information about public affairs (Hollander 1971; Tolley 1973; Hawkins 1974; Bailey 1975). The data on episodes of Fat Albert and the Cosby Kids and Sesame Street intended to emphasize cooperation indicate that the beneficent propaganda was successfully conveyed to children as young as 7 (Silverman 1977; Columbia Broadcasting System 1974).

These various factors--the lack of parental control of viewing, the authority of children in access to programing, its role in providing information--take on their significance when we turn to evidence on the influence of parents or other adults in translating for young viewers the messages television disseminates. Hicks (1968) found that the presence of an adult who has expressed disapproval of a violent portrayal can inhibit the subsequent display of aggressiveness by young children; Lefcourt et al. (1966) found that censorious remarks by the experimenter about the behavior in a sequence from the movie Rebel Without a Cause inhibited the subsequent aggression of college-age subjects. In the area of public affairs, the partisanship of children on the Vietnam War--hawk or dove--paralleled that of parents, although television was the source of information (Tolley 1973). When we examine the correlations between everyday violence viewing and attitudes favoring the use of violence among adolescents, we find that such attitudes, although positively related to violence viewing, are more strongly related to parental indifference in regard to aggressiveness (Dominick and Greenberg 1972). When we examine the positive correlations

between such violence viewing and everyday aggression among adolescents, we find that this relationship is reduced among the children of parents who emphasize nonaggressive behavior (Chaffee 1972a; McLeod et al. 1972a, 1972b). What these findings strongly suggest is that children's interpretations of television messages are highly susceptible to the communication provided by parents or other adults, such as teachers. We have no reason to believe parents typically exercise this authority; we do have reason to believe that it is effective when they do.

The proposition these data appear to support is the reasonable one that television will most influence children when other influences are absent. This view is consistent with the varied findings that television depictions influence children's perceptions of unfamiliar occupations (DeFleur and DeFleur 1967), that children from social strata where family disruption is more common express greater preference for viewing families on television (Surlin and Dominick 1970), and that adolescents with limited opportunities for firsthand knowledge turn to television for ideas about dating and social interaction (Gerson 1966). Such a conclusion was advanced by Himmelweit et al. (1958) 20 years ago, after their large-scale assessment of television's effects on children in England, and it has been supported by the evidence collected since. It would not be fanciful, however, to argue that the extent to which television exercises this potential for authority depends on the degree of abdication indulged in by adults.

MATURATION

The early studies by Schramm (1961) and by Himmelweit (1958) and their colleagues gave considerable attention to the changing role of television as children grew older. Brighter children, along with having greater involvement in a variety of activities, were found to view as much as less bright peers but to decrease viewing compared to such peers as they grew older (Schramm et al. 1961). The implication--that amount of television viewing is relatively unrelated to other variables among younger children, but becomes more distinctly related with age--would appear to hold today although the differential patterns of consumption related to socioeconomic status and intellect are probably less distinct than two decades ago because of the increasing acceptance of television among all social strata (Comstock et al. 1978). In recent years, there has been increasing emphasis on age-related changes in behavior associated with the media (Roberts 1973; Liefer et al. 1974; Comstock and Lindsey 1975; Ward et al. 1977). Such an approach is justified by the differences that age brings in consumption of television, program preferences, parental restrictions over amount of viewing and program selection, the patterns associated with intellect, socioeconomic status, and race, and the increase in adult programming's relevance to behavior and decisionmaking as adolescence is approached.

The available data make it very tempting to believe that the years just before the onset of adolescence may be particularly important for the formation of adult media habits. Exposure to television news and public affairs content between this period and adolescence changes from a byproduct of entertainment viewing to viewing that more frequently occurs by its own justification (Chaffee et al. 1970). At the same time, television use is declining; newspapers are read more frequently. What must be central, however, is the acknowledgement of the continuation of substantial viewing and the continued domination by television of media behavior. The Nielsen estimate for average viewing of those 12-17 years of age is fully three-fourths that for all persons; other media use is modest. Even for public affairs information, any shift toward newspapers is modest enough so at best during adolescence television and newspapers can be said to be equally important as sources (Comstock et al. 1978).

When we take into account the evidence on the efficacy of parental communication in regard to media content, the preadolescent years, because they are the locus for change, appear to be particularly suited for attempts by parents and teachers to exert influence in regard to media choice and use. Yet, the fact that television viewing has been a continuing activity since early childhood argues against delimited activism. It is more plausible to judge this period as particularly suited for intervention regarding television news and public affairs programming and newspaper use and to believe that the time for intervention with regard to television entertainment begins much earlier--as soon as the child is able to comprehend the distinctions advanced.

The issue of age also becomes important in interpreting the results of experiments which demonstrate behavioral effects and employ very young children as subjects. It is sometimes argued that these experiments do not bear on the behavior of older persons. This is a view that ignores the role of theory in developing knowledge about human behavior. Certainly there should be no question that these experiments demonstrate that television may affect the play behavior of young children. The experiment by Sawin (1974) in which violent programming failed to alter aggressive play simply convinces us that effects are not inevitable. Similarly, the experiment by Ross (1972) in which imitation in play after viewing a violent cartoon was confined to acceptable playfulness cannot be taken as invalidating the relevance of the various findings for nonplayful aggression. What this experiment emphasizes is that performance which transgresses social norms certainly does not become inevitable simply because a class of behavior open to influence by television has the potential for such application.

The experiments with very young children demonstrate the operation of certain basic psychological processes. Certain of these processes, such as those concerned with acquisition, are most open to testing with young children whose behavioral repertoires are incomplete and unelaborated. It is more plausible to believe that far more complex sequences of behavior

may become more accessible to older individuals as the result of viewing than to assume no effect at all, but it seems unlikely that such effects could be readily demonstrated by a laboratory-type experiment. With older persons, because of their elaborate repertoires of behavior, we become more concerned with investigating the factors affecting performance than those involved in acquisition, and the role of variations in television portrayals in affecting performance has been amply demonstrated in experiments with subjects of college age.

METHODOLOGICAL IMPERATIVES

We have focused on three themes. The first is the shift toward again taking the media seriously. The second is the strong support for the proposition that television content plays a significant role in the lives of children. The third is the degree to which the autonomy that falls to the child in regard to television leaves the potential for parental exertion of influence unfulfilled.

The shift toward assigning greater social importance to the media is partly a reflection of the time and attention given to television in our society. What is less obvious is the degree to which television may impose new problems for research methodology.

The issue that is most commonly raised is the dilemma posed for demonstrating credible effects of television violence on real-life aggressiveness when ethics forbid the use of a dependent variable of hurtful aggression (Surgeon General's Scientific Advisory Committee 1972). This is not the problem that it might seem, for what is at issue is not the propriety of the required dependent variable but the necessity for experimental tests that reproduce real life in miniature.

The supposed ideal test of media effects would be to conduct a field experiment in which real-life television exposure is manipulated and subsequent real-life behavior measured. The track record of such enterprises does not encourage high expectations (Feshbach and Singer 1971; Stein and Friedrich 1972; Milgram and Shotland 1973; Wells 1973; Parke et al. 1977). There is a persistent risk that the denial of television fare so often necessary to create a treatment or control condition inadvertently will trigger frustration which itself will affect behavior. The necessity of emulating real life often requires the substitution of intact groups for perfect random assignment of subjects. The naturalistic conditions on which credibility rests may prove difficult or impossible to achieve. The integrity of treatment conditions may be compromised not only by the chaos of natural events but by the need to reduce audience complaints over unsought and unfamiliar programming.

There is also the insensitivity of the field experiment to socially important effects (Milgram and Shotland 1973; Comstock 1974). This paradox arises because of the vast size of the broadcast audience. There are numerous influences concomitant with natural circumstances that could mask an effect that may occasionally occur as a consequence of media exposure. These influences include the greater possibilities of imperfect attention to the stimulus, of exposure to stimuli with countervailing effects, of the diminution of media effects over time, of the absence of opportunity to perform a particular class of behavior, and of the greater intrusiveness of the influence of others--that alternately elicitory and inhibitory factor that we glibly denote as "social norms." What the paradox means is that the field experiment is not a wholly trustworthy arbiter of impact. In the field experiment, a phenomenon may occur at a rate below statistical detection, although the actual impact would be of considerable magnitude--whether assessed by number or by social importance. If one person out of 1,000 were affected by a primetime telecast with an audience of 13 million, the magnitude of influence would be 13,000 cases. Such an effect would escape the methodological net of the typical field experiment, although admittedly control and treatment groups demarcated by the Mississippi would suffice.

These many difficulties are given particular poignance for the planning of research strategy by their frequent high cost. In terms of demonstrating effects, the large field experiment has a high ratio of dollars to findings.

Nevertheless, there can hardly be any question that one lesson provided by the Surgeon General's study is that scientific prominence and social credibility are not the same (Comstock 1976). There were about 50 published experiments of the laboratory type that demonstrated a greater degree of behavior said to be aggressive on the part of children or adolescents who had viewed film or television portrayals of violent or aggressive behavior. Such a prominent media researcher as Bogart (1972) argued in retrospect that the conclusion that television violence increased the likelihood of aggressive behavior among young viewers was self-evident prior to the undertaking. The necessity, of course, lay in the vulnerability of the laboratory-type experiment to criticisms of artificiality of the stimuli, dependent measures, and setting (Hartley 1964; Weiss 1969). The conclusion of the Surgeon General's Scientific Advisory Committee (1972) that the evidence was most consistent with support for the hypothesis that television violence increases viewer aggressiveness hinged on the "convergence" of findings from laboratory-type experiments and from surveys relating real-life viewing to everyday aggressiveness. From the evidentiary standpoint, these latter survey findings were the principal contribution of the Surgeon General's study.

The implied solution is reliance on the accumulation of findings from different methods, rather than the ostensible prowess of a single method or the claim--certain to be illusory with the passage of time--of a particular study to inordinate persuasiveness. Such a perspective recognizes at once that media effects will seldom be so dramatic as to dwarf other influences in the course of everyday events and that the sensitiveness of laboratory-type experiments to the detection of effects will seldom be associated with conditions that encourage unqualified generalizability to everyday happenstance. It assigns to the experiment the task of permitting causal inference and the exploration of processes by which effects occur, and it assigns to the survey or, under felicitous conditions, the field experiment the resolution of such findings with the helter skelter of life. It also implies that evidence of association is not simply discarded because it occurs in a methodological context where causal inference is impossible or vulnerable to challenge.

The corollary of this perspective is that the laboratory-type experiment should continue to be employed to test hypotheses derived from various theoretical formulations purporting to predict the occurrence of media effects. Its lack of credibility regarding social policy is a function of its occasional role as sole source of information about impact. It does not by this fact lose its status as the only reasonable means for developing and elaborating theory. Moreover, such application is not by itself devoid of implications for reaching a conclusion about the real-life effects of the media. We will have much greater confidence in our conclusion when it fits a plausible explanation of why the effect in question has transpired, and the plausibility of our explanation will rest on the degree to which it has survived the tests of sensitive and rigorous scrutiny that a laboratory-type setting makes possible.

This argument then adds a fourth theme. It is that research concerned with the effects of television requires unusually careful planning at the Federal agency or private foundation level. Decisions based on what appear to be the imperatives within a genre of method or particular theory may be inadequate. Imagine a matrix devoted to a topic in which methods and theories make up the rows and various issues constitute the columns; at their intersection are the findings. In some instances, a set of new findings may complete a matrix; in others, it may be the matrix itself that requires construction. Television as a topic shares its crosshatched inferential relationship to real-life events with much, perhaps all, of social psychology. This commonality is illustrated by the trend in recent years toward research in naturalistic settings and in the use of unobtrusive measures, both of which ostensibly increase real-life veracity. Where it departs is in the bearing of findings on a powerful institution with its own economic dynamics and in

the degree of common exposure of the population to the kinds of stimuli under investigation, two conditions providing both a high threshold for gaining acceptance of findings and some urgency for reaching that threshold when effects exist.

The problems posed by large-scale field experiments do not lessen the need for experimentation in naturalistic settings. The earlier argument does not inveigh against naturalistic settings but against the belief that the solution to problems of inference with regard to the effects of television is the field experiment. The difficulties that beset such a solution do not lessen the desirability of the testing of hypotheses under as naturalistic circumstances as rigor and sensitivity permit. The suggested answer, then, to complaints that laboratory-type experiments have been artificial is to make them more naturalistic a step at a time. This will retain the cost economies of such experimentation and will provide information about the specific features of everyday life on which media effects are particularly contingent. The ethical darkness invoked by the meaningful measurement of aggression is ameliorated by this solution, which calls for the cumulative development of evidence in behalf of validity rather than the use of measures objectionable on their face. The true dilemma, of course, is not that of harm to experimental participants, willing or unwilling, but the unlikelihood that antisocial or any other behavior genuinely subject to some influence by the media would blossom sufficiently for detection within the time, space, and opportunities afforded by a research design.

REFERENCES

- Allen, M.K., and Liebert, R.M. Effects of live and symbolic deviant-modeling cues on adoption of a previous learned standard. Journal of Personality and Social Psychology, 11:253-260, 1969.
- Bailey, K.D. "Political Learning and Development: Continuity and Change in Childhood Political Orientations, 1973-1975." Unpublished manuscript, University of Maryland, 1975.
- Bandura, A. Influence of model's reinforcement contingencies on the acquisition of imitative responses. Journal of Personality and Social Psychology, 1:589-595, 1965.
- Bandura, A. Social-learning theory of identificatory processes. In: Goslin, D.A., ed. Handbook of Socialization Theory and Research. Chicago: Rand McNally, 1969. p. 213-262.
- Bandura, A. Aggression: A Social Learning Analysis. Englewood Cliffs, N.J.: Prentice-Hall, 1973.
- Bandura, A., and Menlove, F. Factors determining vicarious extinction of avoidance behavior through symbolic modeling. Journal of Personality and Social Psychology, 8:99-108, 1968.
- Bandura, A.; Ross, D.; and Ross, S.A. Transmission of aggression through imitation of aggressive models. Journal of Abnormal and Social Psychology, 63:575-582, 1961.
- Bandura, A.; Ross, D.; and Ross, S.A. Imitation of film-mediated aggressive models. Journal of Abnormal and Social Psychology, 66:3-11, 1963a.
- Bandura, A.; Ross, D.; and Ross, S.A. Vicarious reinforcement and imitative learning. Journal of Abnormal and Social Psychology, 67:601-607, 1963b.
- Berelson, B.R.; Lazarsfeld, P.F.; and McPhee, W.N. Voting: A Study of Opinion Formation in a Presidential Campaign. Chicago: University of Chicago Press, 1954.
- Berelson, B.R., and Steiner, G. Mass communication. In: Berelson, B.R., and Steiner, G. Human Behavior: An Inventory of Scientific Findings. New York: Harcourt Brace and World, 1964. p. 527-555.
- Berkowitz, L. Violence in the mass media. In: Berkowitz, L. Aggression: A Social Psychological Analysis. New York: McGraw-Hill, 1962. p. 229-255.
- Berkowitz, L. The effects of observing violence. Scientific American, 21(2):35-41, 1964.

- Berkowitz, L. Words and symbols as stimuli to aggressive responses. In: Knutson, J.F., ed. Control of Aggression: Implications From Basic Research. Chicago: Aldine-Atherton, 1973. p. 113-143.
- Berkowitz, L., and Alioto, J.T. The meaning of an observed event as a determinant of its aggressive consequences. Journal of Personality and Social Psychology, 28:206-217, 1973.
- Berkowitz, L., and Geen, R.G. Film violence and the cue properties of available targets. Journal of Personality and Social Psychology, 3:525-530, 1966.
- Berkowitz, L., and Geen, R.G. Stimulus qualities of the target of aggression: A further study. Journal of Personality and Social Psychology, 5:364-368, 1967.
- Berkowitz, L., and Rawlings, E. Effects of film violence on inhibitions against subsequent aggression. Journal of Personality and Social Psychology, 66:405-412, 1963.
- Bogart, L. Warning: The Surgeon General has determined that TV violence is moderately dangerous to your child's mental health. Public Opinion Quarterly, 36:491-521, 1972.
- Bower, R.T. Television and the Public. New York: Holt, Rinehart and Winston, 1973.
- Bryan, J.H., and Schwartz, T. Effects of film material upon children's behavior. Psychological Bulletin, 75:50-59, 1971.
- Bryan, J.H., and Walbek, N.H. The impact of words and deeds concerning altruism upon children. Child Development, 41:747-757, 1970.
- Campbell, A.; Gurin, G.; and Miller, W.E. The Voter Decides. Evanston, Ill.: Row, Peterson, 1954.
- Chaffee, S.H. Television and adolescent aggressiveness (overview). In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972a. p. 1-34.
- Chaffee, S.H. "Television and Growing Up: Interpreting the Surgeon General's Report." Paper presented at the meeting of the American Association for Public Opinion Research, Asilomar, California, March 1972b.
- Chaffee, S.H., and McLeod, J.M. Adolescent television use in the family context. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 149-172.

- Chaffee, S.H.; McLeod, J.M.; and Atkin, C.K. "Parent-Child Similarities in Television Use." Paper presented at the meeting of the Association for Education in Journalism, Washington, D.C., 1970.
- Chaffee, S.H.; McLeod, J.M.; and Atkin, C.K. Parental influences on adolescent media use. American Behavioral Scientist, 14:323-340, 1971.
- Chaffee, S.H.; Ward, L.S.; and Tipton, L.P. Mass communication and political socialization. Journalism Quarterly, 47:647-659; 666, 1970.
- Collins, W.A. "Aspects of Television Content and Children's Social Behavior." Final report, University of Minnesota, July 1974.
- Columbia Broadcasting System. A Study of Messages Received by Children Who Viewed an Episode of Fat Albert and the Cosby Kids. New York: Columbia Broadcasting System, 1974.
- Comstock, G.A. Television Violence: Where the Surgeon General's Study Leads. Santa Monica: The Rand Corporation, 1972.
- Comstock, G.A. Book review of Television and Antisocial Behavior: Field Experiments. Journal of Communication, 24(3):155-158, 1974. Also available as Milgram's Schotch Verdict on TV -- A Retrial. Santa Monica: The Rand Corporation, 1974.
- Comstock, G.A. The Evidence on Television Violence. Paper delivered at the National Homicide Symposium, San Francisco, October 26-30, 1976. Santa Monica: The Rand Corporation, 1976.
- Comstock, G. The second teacher: Recent research on television. Principal, 56(3):16-21, January-February 1977.
- Comstock, G.; Chaffee, S.; Katzman, N.; McCombs, M.; and Roberts, D. Television and Human Behavior. New York: Columbia University Press, 1978.
- Comstock, G., and Lindsey, G. Television and Human Behavior: The Research Horizon, Future and Present. Santa Monica: The Rand Corporation, 1975.
- Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. I. Media Content and Control. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972a.
- Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972b.
- Comstock, G.A.; Rubinstein, E.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. V. Television's Effects: Further Explorations. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.

- DeFleur, M.L., and DeFleur, L.B. The relative contribution of television as a learning source for children's occupational knowledge. American Sociological Review, 32:777-789, 1967.
- Dominick, J.R., and Greenberg, B.S. Attitudes toward violence: The interaction of television, exposure, family attitudes, and social class. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 314-335.
- Drabman, R.S., and Thomas, M.H. Does media violence increase children's toleration of real-life aggression? Developmental Psychology, 10:418-421, 1974.
- Elliott, R., and Vasta, R. The modeling of sharing: Effects associated with vicarious reinforcement, symbolization, age and generalization. Journal of Experimental Child Psychology, 10:8-15, 1970.
- Eron, L.D.; Huesmann, L.R.; Lefkowitz, M.M.; and Walder, L.O. Does television violence cause aggression? American Psychologist, 27:253-263, 1972.
- Feshbach, S. The stimulating versus cathartic effects of a vicarious aggressive activity. Journal of Abnormal and Social Psychology, 63:381-385, 1961.
- Feshbach, S. The catharsis effect: Research and another view. In: Baker, R.K., and Ball, S.J., eds. Violence and the Media: A Staff Report to the National Commission on the Causes and Prevention of Violence. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1969. p. 461-472.
- Feshbach, S. Reality and fantasy in filmed violence. In: Murray, J.P., Rubinstein, E.A., and Comstock, G.A., eds. Television and Social Behavior, Vol. II. Television and Social Learning. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 318-345.
- Feshbach, S., and Singer, R.D. Television and Aggression: An Experimental Field Study. San Francisco: Jossey-Bass, 1971.
- Friedrich, L.K., and Stein, A.H. Prosocial television and young children: The effects of verbal labeling and role playing on learning and behavior. Child Development, 46:27-38, 1975.
- Fryear, J.L., and Thelan, M.H. Effect of sex of model and sex of observer on the imitation of affectionate behavior. Developmental Psychology, 1:299, 1969.
- Geen, R.G., and Berkowitz, L. Some conditions facilitating the occurrence of aggression after the observation of violence. Journal of Personality, 35:666-676, 1967.

- Geen, R.G., and Quanty, M.B. The catharsis of aggression: An evaluation of a hypothesis. In: Berkowitz, L., ed. Advances in Experimental Social Psychology, Vol. IX. New York: Academic Press, 1977. p. 1-37.
- Geen, R.G., and Stonner, D. Context effects in observed violence. Journal of Personality and Social Psychology, 25:145-150, 1972.
- Gerbner, G., and Gross, L. Living with television: The violence profile. Journal of Communication, 26(2):173-199, 1976.
- Gerson, W.M. Mass media socialization behavior: Negro-white differences. Social Forces, 45:40-50, 1966.
- Gorn, G.J.; Goldberg, M.E.; and Kanungo, R.N. The role of educational television in changing the intergroup attitudes of children. Child Development, 47:277-280, 1976.
- Greenberg, B.S., and Dervin, B. Use of the Mass Media by the Urban Poor. New York: Praeger, 1970.
- Hartley, R.L. The Impact of Viewing "Aggression": Studies and Problems of Extrapolation. New York: Columbia Broadcasting System, 1964.
- Hawkins, R.P. "Children's Acquisition of Current Events Information in the Context of Family, Peers, Media Use, and Pre-Existing Attitudes." Unpublished doctoral dissertation, Stanford University, 1974.
- Hess, R.D., and Goldman, H. Parents' views of the effects of television on their children. Child Development, 33:411-426, 1962.
- Hicks, D.J. Effects of co-observer's sanctions and adult presence on imitative aggression. Child Development, 38:303-309, 1968.
- Hill, J.H.; Liebert, R.M.; and Mott, D.E.W. Vicarious extinctions of avoidance behavior through films: An initial test. Psychological Reports, 22:192, 1968.
- Himmelweit, H.T.; Oppenheim, A.N.; and Vince, P. Television and the Child. London: Oxford University Press, 1958.
- Hollander, N. Adolescents and the war: The sources of socialization. Journalism Quarterly, 58:472-479, 1971.
- Hovland, C.I. Effects of the mass media of communication. In: Lindzey, G., ed. Handbook of Social Psychology, Vol. II. Cambridge, Mass.: Addison-Wesley, 1954. p. 1062-1103.
- Hovland, C.I. Reconciling conflicting results derived from experimental and survey studies of attitude change. American Psychologist, 14:8-17, 1959.

- Howitt, D. Television and aggression: A counterargument. American Psychologist, 27:969-970, 1972.
- Hyman, H.H. Mass communication and socialization. Public Opinion Quarterly, 37:524-540, 1973.
- Johnstone, J.W.C. Social integration and mass media use among adolescents: A case study. In: Blumler, J.G., and Katz, E., eds. The Uses of Mass Communications: Current Perspectives on Gratifications Research. Beverly Hills: Sage, 1974. p. 35-47.
- Kaplan, R.M. On television as a cause of aggression. American Psychologist, 27:968-969, 1972.
- Kaplan, R.M., and Singer, R.D. Television violence and viewer aggression: A reexamination of the evidence. Journal of Social Issues, 32(4):35-70, 1976.
- Katz, E. Social Research on Broadcasting: Proposals for Further Development. London: British Broadcasting Corporation, 1977.
- Kay, H. Weaknesses in the television-causes-aggression analysis by Eron et al. American Psychologist, 27:970-973, 1972.
- Klapper, J.T. What we know about the effects of mass communication: The brink of hope. Public Opinion Quarterly, 21:453-474, 1957.
- Klapper, J.T. The Effects of Mass Communication. New York: Free Press, 1960.
- Klapper, J.T. Mass Communication research: An old road resurveyed. Public Opinion Quarterly, 27:515-527, 1963.
- Krull, R., and Watt, J.H., Jr. "Television Viewing and Aggression: An Examination of Three Models." Paper presented at the meeting of the International Communication Association, Montreal, April 1973.
- Lazarsfeld, P.F.; Berelson, B.; and Gaudet, H. The People's Choice: How the Voter Makes Up His Mind in a Presidential Campaign. New York: Duell, Sloan and Pearce, 1944.
- Lefcourt, H.M.; Barnes, K.; Parke, R.; and Schwartz, F. Anticipated social censure and aggression-conflict as mediators of response to aggression induction. Journal of Social Psychology, 70:251-263, 1966.
- Lefkowitz, M.M.; Eron, L.D.; Walder, L.O.; and Huesmann, L.R. Television violence and child aggression: A followup study. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 35-135.

- Lefkowitz, M.M.; Eron, L.D.; Walder, L.O.; and Huesmann, L.R. Growing Up To Be Violent. Elmsford, N.Y.: Pergamon Press, 1977.
- Leifer, A.D.; Gordon, N.J.; and Graves, S.B. Children and Television: Recommended Directions for Future Efforts. Final report to the Office of Child Development, Department of Health, Education, and Welfare. Cambridge, Mass.: Center for Research in Children's Television, Harvard University, May 1973.
- Leifer, A.D.; Gordon, N.J.; and Graves, S.B. Children's television: More than mere entertainment. Harvard Educational Review, 44:213-245, 1974.
- Liebert, R.M., and Baron, R.A. Some immediate effects of televised violence on children's behavior. Developmental Psychology, 6:469-475, 1972.
- Liebert, R.M.; Fernandez, L.E.; and Gill, L. The effects of a friendless model on imitation and prosocial behavior. Psychonomic Science, 16:81-82, 1969.
- LoSciuto, L.A. A national inventory of television viewing behavior. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 33-86.
- Lyle, J., and Hoffman, H.R. Children's use of television and other media. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972a. p. 129-256.
- Lyle, J., and Hoffman, H.R. Explorations in patterns of television viewing by preschool-age children. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972b. p. 257-273.
- McIntyre, J.J., and Teevan, J.J. Television violence and deviant behavior. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 383-435.
- McLeod, J.M.; Atkin, C.K.; and Chaffee, S.H. Adolescents, parents, and television use: Adolescent self-report measures from Maryland and Wisconsin samples. In: Comstock, G.A., and Rubinstein, E.A., eds., Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972a. p. 173-238.

- McLeod, J.M.; Atkin, C.K.; and Chaffee, S.H. Adolescents, parents and television use: Self-report and other-report measures from the Wisconsin sample. In: Comstock, G.A., and Rubinstein, E.A., eds., Television and Social Behavior, Vol. III. Television and Adolescent Aggressiveness. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972b. p. 239-313.
- Maccoby, E.E. Why do children watch television? Public Opinion Quarterly, 18:239-244, 1954.
- Meyer, T.P. Effects of viewing justified and unjustified real film violence on aggressive behavior. Journal of Personality and Social Psychology, 23:29, 1972.
- Meyer, T.P. Children's perceptions of favorite television characters as behavioral models. Educational Broadcasting Review, 7(1):25-33, 1973.
- Milgram, S., and Shotland, R.L. Television and Antisocial Behavior: Field Experiments. New York: Academic Press, 1973.
- Murray, J.P. Television in inner-city homes: Viewing behavior of young boys. In: Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds., Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 345-394.
- Murray, J.P.; Rubinstein, E.A.; and Comstock, G.A., eds. Television and Social Behavior, Vol. II. Television and Social Learning. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Parke, R.D.; Berkowitz, L.; Leyens, J.P.; West, S.G.; and Sebastian, R.J. Some effects of violent and nonviolent movies on the behavior of juvenile delinquents. In: Berkowitz, L., ed. Advances in Experimental Social Psychology, Vol. X. New York: Academic Press, 1977. p. 135-172.
- Poulos, R.W., and Davidson, E.S. "Effects of a Short Modeling Film on Fearful Children's Attitudes Toward the Dental Situation." Unpublished manuscript, State University of New York, Stony Brook, 1971.
- Roberts, D.F. Communication and children: A developmental approach. In: Pool, I. de S., and Schramm, W., eds. Handbook of Communication. Chicago: Rand McNally, 1973. p. 174-215.
- Rosekrans, M.A. Imitation in children as a function of perceived similarities to a social model of vicarious reinforcement. Journal of Personality and Social Psychology, 7:307-315, 1967.
- Ross, L.B. "The Effect of Aggressive Cartoons on the Group Play of Children." Doctoral dissertation, Miami University, 1972.

- Rubinstein, E.A.; Comstock, G.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. IV. Television in Day-to-Day Life: Patterns of Use. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Rubinstein, E.A.; Liebert, R.M.; Neale, J.M.; and Poulos, R.W. Assessing Television's Influence on Children's Prosocial Behavior. Stony Brook, N.Y.: Brookdale International Institute, 1974.
- Sawin, D.B. "Aggressive Behavior Among Children in Small Play-Group Settings With Violent Television." Doctoral dissertation, University of Minnesota, 1974.
- Schramm, W.; Lyle, J.; and Parker, E.B. Television in the Lives of Our Children. Stanford, Ca.: Stanford University Press, 1961.
- Silverman, L.T. "Effects of Sesame Street Programming on the Cooperative Behavior of Preschoolers." Doctoral dissertation, Stanford University, 1977.
- Simon, H.A., and Stern, F. The effect of television upon voting behavior in Iowa in the 1952 presidential election. American Political Science Review, 49:470-477, 1955.
- Stein, A.H., and Friedrich, L.K. Television content and young children's behavior. In: Murray, J.P.; Rubinstein, E.A.; and Comstock, G.A., eds. Television and Social Behavior, Vol. II. Television and Social Learning. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 202-317.
- Stein, G.M., and Bryan, J.H. The effect of a television model upon rule adoption behavior of children. Child Development, 43:268-273, 1972.
- Steuer, F.B.; Applefield, J.M.; and Smith, R. Televised aggression and the interpersonal aggression of preschool children. Journal of Experimental Child Psychology, 11:442-447, 1971.
- Surgeon General's Scientific Advisory Committee on Television and Social Behavior. Television and Growing Up: The Impact of Televised Violence. Report to the Surgeon General, United States Public Health Service. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Surlin, S.H., and Dominick, J.R. Television's function as a "third parent" for black and white teenagers. Journal of Broadcasting, 15:55-64, 1970.
- Tannenbaum, P.H. Emotional arousal as a mediator of erotic communication effects. In: Technical Report of the Commission on Obscenity and Pornography, Vol. VIII. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1971. p. 326-356.

- Tannenbaum, P.H. Studies in film- and television-mediated arousal and aggression: A progress report. In: Comstock, G.A.; Rubinstein, E.A.; and Murray, J.P., eds. Television and Social Behavior, Vol. V. Television's Effects: Further Explorations. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972. p. 309-350.
- Tannenbaum, P.H., and Zillmann, D. Emotional arousal in the facilitation of aggression through communication. In: Berkowitz, L., ed. Advances in Experimental Social Psychology, Vol. VIII. New York: Academic Press, 1975. p. 149-192.
- Tasch, M.O. "Modeling of Pro-Social Behavior by Pre-School Subjects of High and Low Self-Esteem." Doctoral dissertation, Syracuse University, 1970.
- Tolley, H., Jr. Children and War: Political Socialization to International Conflict. New York: Teachers College Press, Columbia University, 1973.
- Walters, R.H.; Leat, M.; and Mezei, L. Inhibition and disinhibition of responses through empathetic learning. Canadian Journal of Psychology, 17:235-243, 1963.
- Walters, R.H., and Parke, R.D. Influence of response consequences to a social model on resistance to deviation. Journal of Experimental Child Psychology, 1:269-280, 1964.
- Wand, B. Television viewing and family choice differences. Public Opinion Quarterly, 32:84-94, 1968.
- Ward, S.; Wackman, D.; and Wartella, E. How Children Learn to Buy: The Development of Consumer Information-Processing Skills. Beverly Hills: Sage, 1977.
- Weiss, W. Effects of the mass media of communication. In: Lindzey, G., and Aronson, E., eds. The Handbook of Social Psychology, Vol. V. Applied Social Psychology. Reading, Mass.: Addison-Wesley, 1969. p. 77-195.
- Wells, W.D. "Television and Aggression: Replication of an Experimental Field Study." Unpublished manuscript, Graduate School of Business, University of Chicago, 1973.
- Wolf, T.M. Effects of televised modeled verbalizations and behavior on resistance to deviation. Developmental Psychology, 8:51-56, 1973.
- Wolf, T.M., and Cheyne, J.A. Persistence of effects of live behavioral, televised behavioral, and live verbal models on resistance to deviation. Child Development, 43:1429-1436, 1972.

- Yates, G.C.R. Influence of televised modeling and verbalization on children's delay of gratification. Journal of Experimental Child Psychology, 18:333-339, 1974.
- Zillmann, D. Excitation transfer in communication-mediated aggressive behavior. Journal of Experimental Social Psychology, 7:419-434, 1971.
- Zillmann, D.; Hoyt, J.L.; and Day, K.D. Strength and duration of the effect of aggressive, violent, and erotic communications on subsequent aggressive behavior. Communication Research, 1:286-306, 1974.
- Zillmann, D., and Johnson, R.C. Motivated aggressiveness perpetuated by exposure to aggressive films and reduced by exposure to nonaggressive films. Journal of Research in Personality, 7:261-276, 1973.
- Zillmann, D.; Johnson, R.C.; and Hanrahan, J. Pacifying effect of happy ending of communications involving aggression. Psychological Reports, 32:967-970, 1973.

Chapter 6. THE EFFECTS OF TELEVISION ON INSTITUTIONALIZED CHILDREN

Eli A. Rubinstein, Ph.D.

In all of the recent upsurge in research on television and social behavior, a number of topics remain relatively unexplored. The emphasis in the past few years has shifted away from examining the effects of television violence, even though that issue remains of major public concern. Instead, researchers are now asking themselves more sophisticated questions. The issue is no longer whether television has effects but rather who is influenced and in what ways by what kind of content. The very topics in this series of papers attest to the range of areas now under investigation.

It is surprising, therefore, that relatively little attention has been paid to one special population for whom television may well play an important part in their daily lives--institutionalized children. With the exception of a few field studies involving boys in residential schools for juvenile delinquents (Feshbach and Singer 1971; Parke et al. 1977; Wells 1973), the television-viewing behaviors of institutionalized children have not been systematically examined. The reason for this neglect is probably no more profound than that research interest has not yet gotten around to this area.

RESEARCH ON INSTITUTIONALIZED PATIENTS

One of the few such studies (Rubinstein et al. 1977) was a comprehensive examination of television-viewing behaviors of mental patients in 18 psychiatric centers in New York State. The population examined included both adult patients in State psychiatric centers as well as emotionally disturbed children in a special center for the treatment of these children. The findings of this survey clearly confirm that television, at least in these State centers, occupies a significant part of the institutionalized individual's daily activity.

On the wards for the adult patients, the television set in the day rooms was on virtually all day, an average of 12 hours per day. The ward staff reported that more than one-half the patients in these psychiatric centers watched 1 or more hours of television during the day and that 60 percent watched 1 or more hours during the evening. At the same time, about

one-third of the patients watched no television at all, either during the day or at night.

An examination of the viewing behaviors by age categories showed no significant differences in time spent watching television, although adolescent heavy viewers tended to see more daytime programs than did geriatric heavy viewers. By the same token, ward personnel indicated that the heavy viewers among adolescents were more troublesome, less stable, and less competent than the average adolescent patient, whereas the heavy viewers among the geriatric patients tended to be less troublesome, better informed, more competent, and more stable than the average geriatric patient. In general, the ward staff felt that television had a significantly more positive impact on geriatric patients than on adolescent patients, although on an overall basis television was seen as having a positive effect on the totality of institutionalized patients.

It is clear from these findings that television does seem to have some effect on institutionalized patients and that the effect is somewhat differential depending on patient group. These systematic differences seem related to age, intensity of illness, and length of institutionalization.

In another part of this survey, Rubinstein et al. looked at the television-viewing behaviors of a sample of emotionally disturbed children in an inpatient facility located on Long Island. A total of 94 children, ages 6-14 (mean age of 12.3), in 13 separate patient living areas were surveyed. Most of the children were diagnosed as psychotic or with severe behavior disorders. About one-third of the children were identified as autistic and were housed in living units identified as autistic units. Of the 94 children, only 21 were girls.

The television sets, one in each unit for eight or fewer children, were on for an average of 9 hours per day. For the 34 children on the autistic units, the average viewing time per child was about 1 hour per day. Children on the other units averaged about 3½ hours of television viewing per day. Therapy aides on the autistic units generally imposed more restrictions on the type of program, usually selecting cartoons, or Sesame Street, or programs with music. On the other units, the children themselves were more likely to select the program to be viewed. Therapy aides noted that certain programs or types of programs were more often viewed and/or discussed by these children. These include action/adventure shows, crime dramas, cartoons, situation comedies, and some noncommercial programs such as Mister Rogers' Neighborhood and Sesame Street.

It was also noted that patients newly admitted to this children's facility typically went through an initial period of heavy television viewing. As the children became more familiar with the institutional setting, they tended to reduce the amount of television viewing.

Almost all the therapy aides reported a variety of observed behaviors by the children which seemed to be related to what they had viewed on television. These included imitating aggressive behavior as well as pretending to be one of the major characters on a favorite program. On the autistic units some unusual behaviors seemed to have been provoked by what was seen on television. Instances included hallucinating in response to televised violence, acting out in response to commercials, or repeating commercial jingles heard on television. For children who otherwise communicate little, this behavior can properly be classified unusual.

For this population of children, both those in autistic units as well as in the less severely disturbed groups, the staff reported that heavy viewers tend to be more stable and less troublesome than the average patient. Almost 60 percent of the aides reported that television made their job easier. It kept the children occupied, tended to quiet them, and sometimes stimulated helpful behavior.

In another related study, this same research team (Kochnowar et al. 1978) more closely examined some of the home television-viewing behaviors of both inpatient and outpatient samples in this State-operated children's psychiatric facility. The data involve the children's use of television and their reactions to television. A sample of 25 inpatients and 25 outpatients was interviewed. Data were also collected on the parents' viewing habits and preferences, their control over the children's television viewing, and their perception of their children's viewing behaviors.

The mean age of the inpatient children was 11.7 years. For the outpatient children the mean age was 10.2 years. The diagnoses of the inpatient group were either psychoses or severe behavior disorders. For the outpatient group, the diagnoses were primarily transient situational disturbances or behavior disorders. Most of the fathers in both groups were either skilled workers or managers and were high school graduates. However, a smaller proportion of fathers in these two groups were professionals or had college degrees than in the general population in this geographic region. Thus, the sample of patient's parents seem of a lower socioeconomic status than a sample of "normal" school children's parents.

Many aspects of the viewing habits and practices of the two study groups were similar to those of normal populations, with the greatest degree of similarity found in the data pertaining to characteristics of the television viewing environment. In particular, the number and location of sets available, restrictions placed on television viewing in the home, parental

encouragement/discouragement of programs, and the presence of various co-viewers were fairly comparable among groups.

There were more differences between the patient groups and normal populations on the quantitative and qualitative aspects of viewing. Inpatients appear to watch somewhat less television than has been reported for samples of normal children, and outpatients seem to view somewhat more. The prevalent preference for cartoon programs and identification with cartoon characters on the part of the inpatients indicate that, in some ways, they are more similar to younger children than they are to children of their same chronological age.

The greatest difference among the groups appears to be in the impact of television upon the children. More inpatients than outpatients or "normals" dream frequently about what they see on television, and many of those dreams are frightening to them. A majority of both patient groups have wished to imitate something seen on television, but more inpatients have attempted to do so. Four-fifths of both patient groups indicated that watching television was associated with positive mood states, but more inpatients than outpatients reported the presence of negative mood states while not viewing.

On the whole, the various findings strongly suggest television viewing influences many aspects of the children's behavior while awake or asleep, with the magnitude of these effects being somewhat greater in the inpatient sample.

The data from these two surveys, demonstrating that television has an impact on institutionalized children, have important implications for future research. It is relevant to note that research on normal children has moved from documenting television's general influence on behavior to focusing on its positive potential. Much the same shift in emphasis should be attempted in research with these disturbed children.

RESEARCH ON NORMAL CHILDREN

At this point, it might be useful to review briefly some of the findings with normal children and thus to help identify appropriate directions for future research with these institutionalized children. It is a reasonable premise that effects as demonstrated with normal children will also obtain, to a lesser or greater degree, with these children at risk.

Effects of Television Violence

The effects of television violence on children has been thoroughly researched. The variety of effects has been well summarized (Comstock and Lindsey 1975; Stein and Friedrich 1975). In a recent paper, Watt and Krull (1977) provide a theoretical discussion of three models of television viewing and aggression which they identify as the catharsis, facilitation, and arousal models. The facilitation model, which derives from social learning theory, assumes that observational learning takes place when viewing violence and thereby facilitates aggressive behavior. The arousal model (Tannenbaum 1972) hypothesizes that strong dramatic portrayals, as in erotic or violent scenes, evoke a generalized emotional arousal. The catharsis model, in some contrast, assumes that viewing violence tends to dissipate the aggressive drive because of the vicarious experience and thus decreases overt aggressive behavior.

Watt and Krull reexamine data from prior published studies to test these three theoretical models. No support was found for the catharsis theory--a finding similar to that in the report of the Surgeon General's Committee (1972). Their conclusion is that a combination of the facilitation and arousal models best fits the research findings.

The lack of confirmation for the catharsis hypothesis is important because this theory dies a slow death. It is constantly resurrected in public defense of the portrayal of violence as useful. And yet even some scientists who have done research to test the validity of the catharsis theory no longer claim its persuasiveness. For example, in a recent detailed review of the literature, Kaplan and Singer (1976) conclude that neither the catharsis theory nor an activation effect is supported by the evidence. Rather, they find a null hypothesis, with no conclusive evidence that television violence induces aggressive behavior. That position is held by only a very small minority of competent scientists. Most researchers reject the null hypothesis.

In this context, important implications for the specialized population of institutionalized children derive from the findings that place this group among those who are more susceptible to the influence of filmed aggression. There is evidence that attribution of reality to television portrayals is inversely related to intelligence (Greenberg and Reeves 1976; Chaney 1970), just as it is a function of the developmental process (Singer 1973). Other characteristics that seem related to increased reactivity to aggressive television content are: Prior aggressiveness (Friedrich and Stein 1973), frustration (Hanratty et al. 1972), and lack of prior experience with the situation being depicted aggressively (Kniveton and Stephenson 1970). All of these findings suggest that the disturbed child and the mentally retarded child, already at risk because of their disabilities, may be especially vulnerable to the adverse influence of televised violence.

One other aspect of television violence is the issue of "comic" violence. Defenders of television, especially industry officials, contend that

comic and slapstick humor does not harm children. It is true that research findings show that fantasy violence has less effect than violence assumed to be real (Feshback 1972). At the same time, studies employing violent cartoons have shown that exposure to such cartoons can lead to aggressive behavior (Stein and Friedrich 1972; Steuer et al. 1971).

The error in dismissing the effects of comic violence is based on the mistaken premise that children see the content as adults do. Such similarity in perception, especially with younger children, is rare. For example, Dorr and Roberts (1972) found that negative or positive consequences for aggression on television do not affect the child's choice of aggression as a conflict solution. Collins et al. (1973) found that children of elementary school age are not able to understand means-and-ends relationships. It seems especially likely, that if these findings hold for normal children, the disparity between adult perceptions and the child's view is even greater when the children have severe emotional problems or are mentally retarded. In this context, Gerbner's findings (Gerbner et al. 1977), that heavy television viewers see the world in the same sinister light that is depicted in this excessive portrayal of violence, are especially provocative. We do not know but what the disturbed child may be even more vulnerable to this "mean world" outlook than the normal child who probably has more positive reinforcers in his daily life than children at risk.

Effects of Prosocial Programing

Happily, and by the same token, these at-risk children may be especially responsive to the influence of prosocial programing. Researchers (Rubinstein et al. 1974; Liebert and Poulos 1975; Sprafkin et al. 1975) have identified the nature and quantity of certain prosocial behaviors (altruism, expressions of sympathy, explanation of feelings, and reparation for bad behavior). These same researchers have demonstrated that first-and second-grade children exposed to a program containing a dramatic helping scene were more helpful in an experimental play situation than were children exposed to more neutral program content. Other researchers (Collins and Getz 1976, and Friedrich and Stein 1975) have also shown that exposure of normal children to prosocial television programing increases the likelihood of positive behavior.

One distinct and important development from this research on prosocial behavior is the use by the networks themselves of this concept of prosocial messages. Not only have the networks actively pursued the concept in their recent programing, they have done research on its impact. A CBS program, Fat Albert and the Cosby Kids, has purposively included prosocial lessons, CBS social research scientists have shown that the children who watch have been able to verbalize the prosocial themes (CBS Broadcast Group 1974).

While the literature on effects of prosocial programing on children at risk is very sparse, some relevant findings have been reported. Schizophrenic children have been shown to learn socially positive behavior from appropriate

films (Lovaas 1968). Similarly, modeling from films has been demonstrated with retarded children (Fechter 1971), with impulsive children (Ridberg et al. 1971), and with the language-deficient child (Schwartz and Bryan 1971).

It seems fairly clear that a major potential for modifying the behavior of these children with special needs exists in the development of appropriate prosocial program content for use with such children.

Effects of Stereotyping

Much attention in recent years has been paid to the subtle distortions of reality inherent in stereotypical portrayals on television of various ethnic groups and of the sex roles of both men and women. Constant repetition of these stereotypical examples must have some effect on the attitudes and values of children who view these portrayals. It is to be expected that the limited real-life experiences of children would make them susceptible to accepting television portrayal of the world as an accurate reflection of reality. Indeed, Lyle and Hoffman (1972) found that half of the first graders they interviewed believed that television characters were like people they knew.

More direct evidence of the influence of television stereotypes was found by Graves (1975). She showed cartoons to samples of black and white children. Some of the cartoons showed blacks in positive portrayal, while others presented blacks in a negative light. While black children were not adversely affected by the negative portrayal, the white children were influenced to believe that negative portrayal.

Evidence is also accumulating that sex-role biases can be influenced by television viewing. Frueh and McGhee (1975) found that elementary school children who are heavy television viewers are more likely to have stereotypical sex-role attitudes than are light television viewers. Such evidence would be less compelling if it were not accompanied by evidence that television does indeed portray males and females in sex-typed ways. Gerbner (1972) and Tedesco (1974) have shown that not only are males much more prevalent in television entertainment, filling 70 percent of all television roles, they are portrayed as more powerful, more stable, and smarter than females.

With the exception of blacks, and these only in recent years, most ethnic minorities are underrepresented on television. When they are presented, it is usually in an unfavorable light.

That this unfavorable view of other ethnic groups need not be fostered on television is documented by a few recent children's programs dedicated to more positive presentations. Sesame Street seems to have improved children's racial attitudes (Bogatz and Ball 1971). Big Blue Marble similarly has

encouraged positive awareness of children from other ethnic backgrounds (Roberts et al. 1974), as has Vegetable Soup, which was found to make young child viewers more accepting of children of different races (Mays et al. 1975).

Again, it seems plausible that these effects found with normal children are likely to prevail also with children under serious mental stress.

Effects of Advertising

As the evidence accumulates on the various ways television influences the attitudes and behavior of children, the role of television advertising has come under scrutiny by Government agencies, by consumer advocate groups, and by the advertisers themselves. Research in this field is still relatively new. A recent comprehensive review (Adler 1977) documents the limited amount of published research. What evidence has been accumulated confirms the conclusion that television advertising influences children.

Insofar as emotionally disturbed children are concerned, Rubinstein et al. (1977) have found that these children are likely to imitate commercial messages and to sing commercial jingles. In fact, informal responses from a number of mental health specialists working with autistic children reveal that these children, otherwise noncommunicative, have been found to repeat commercial jingles or songs spontaneously. It is an intriguing question as to why this happens so frequently and what it may mean about the autistic child's responsiveness to television.

What is perhaps of most interest in the research findings on television advertising is that the children clearly are socialized by television toward becoming consumers. Children learn about brands from television (Ward et al. 1975). And children, as they reach the fifth and sixth grades, have learned to distrust the messages in the commercial (Adler 1977).

Parental attitudes about children's commercials tend to be negative (Ward et al. 1975), especially among parents of younger children. To some extent, this reflects the subtle pressure to buy which these commercials place on the parent. A more important, and as yet not fully answered, question is how these commercials may add to any stress to the parent-child relationship. That question is an especially intriguing one for parents of emotionally disturbed children.

Television and Socialization

It seems fairly clear from the research evidence that television now plays a pervasive, if not critical, role in the socialization process of the American child today. The identification of desirable and undesirable

behaviors, attitudes about groups of people, and even a general view of the world are at least partially influenced by television. This influence is far from all negative. And therein lies the opportunity for future research and for public policy modification to increase the positive influence of television while reducing the negative effects. Since other chapters in this volume are focused on this topic for the normal child, this chapter presents a proposed approach to exploring ways of improving the use of television as a socialization agent for disturbed children.

Modifying the Effects of Television Viewing on Institutionalized Children

With all of the adjustment problems relating to institutionalization, children in inpatient psychiatric facilities need as much environmental support as the institution can provide. It is relevant to point out that in the survey described above (Rubinstein et al. 1977), children newly admitted to that facility were heavier television viewers than those children who had been in the institution for some time. Given the considerable amount of home television viewing by most children, coupled with the fact that television viewing is one of the few activities in the institution familiar to the child, it is understandable that children would turn to that activity in the early transition phase of their hospitalization.

More importantly, the early findings with this at-risk population suggest the possibility that television viewing might be used as a modest form of therapeutic intervention. It is not far fetched to make comparison with such approaches as recreational therapy and dance therapy, where otherwise recreational activities have been structured to have some therapeutic utility. What is still not known is how this therapeutic value may be achieved.

As a very first step in this direction, a field study is presently in development by the writer and his colleagues, using the same State children's psychiatric center where the earlier survey was made. The study will explore the assumption that a diet of prosocial television programing selected from existing commercial television can induce positive or prosocial behavior. As an added intervention, postprogram discussions will be conducted with the children by trained personnel as a means of labeling and encouraging prosocial attitudes and behaviors.

The primary objectives of the study are to examine in depth the impact of television viewing on the daily lives of a sample of institutionalized children with psychiatric problems and to measure and assess the effects of increasing the amount of prosocial television programing presented to these institutionalized children. In addition, the study will allow the

assessment of the effects of a postprogram intervention designed to mitigate negative effects of violent programming and enhance positive effects of prosocial programming.

A brief summary might provide a useful example of the kind of research with this specialized population which provides some new departures in the constructive use of commercial television. The subjects will consist of approximately 120 of the higher functioning children who are resident patients at the specialized children's center. The children will participate in a 4-week experimental intervention during which their television diet will be controlled. The other independent variable will be the absence or presence of postprogram discussion.

The television diet will be either (a) one consisting of programs that are typically watched on the wards or (b) an experimental diet consisting of specially selected programs from a video-tape library of recently aired commercial shows which are high in prosocial content and low in aggressive content. All presentations will consist of programs shown to be popular with members of this population.

Thus, there will be essentially four conditions: (1) "normal" television diet with no postprogram discussion, essentially the present condition of television viewing, (2) normal diet with discussion, (3) prosocial diet with no discussion, and (4) prosocial diet with discussion.

Appropriate baseline information will be obtained by a week of pretreatment observation. This will be followed by 2 weeks of treatment/observation using one of the four conditions. A final week of posttreatment observation will complete the 4-week experiment. The pretreatment and posttreatment phases in each instance are identical: Children watch normal programming without structured discussions. Behavioral observations and ratings will be collected. The same observations and ratings will also be made during the middle 2 weeks of experimental treatment conditions.

In addition to behavioral observations, the dependent measures will include ward staff ratings and a variety of specially developed structured situations.

Appropriate statistical procedures, primarily analysis of covariance, should tell us the respective treatment effects.

This brief description does not, of course, cover all the complexities of the research design. Not the least of the methodological problems derive from doing this study in a clinical setting. The rigor of the design must in some instances yield to the needs and demands of clinical care. Nevertheless, this approach seems a useful way to begin to see if television viewing can be modified to serve as a positive influence in the daily lives

of these children. The study is intended as the first in a series to attempt to transform the potentially harmful effects of television viewing into a more constructive influence on this at-risk population. If the anticipated results occur, this approach may have useful long-range implications for the care and treatment of institutionalized children. Further, since the role of television in other institutionalized settings (e.g., homes for the aged, prisons, detention centers) is unknown, this approach may have implications for explorations in these directions as well.

Mental Health Implications

Perhaps in no other area of television research are the direct mental health implications as clearly apparent, and so directly related to clinical care of the mentally disabled, as in the examination of television's effects on the institutionalized child. On the basis of absolute numbers, this population is only a fraction of the millions of children who watch television in their own homes. There are probably no more than 50,000 children under the age of 18 now hospitalized in State institutions and in private and general hospitals with psychiatric services. Nevertheless, the potential for examining and modifying television's effects on this group is significant.

It should be noted that the conclusion of the report of the Surgeon General's Committee (1972) indicated that the relationship between television violence and later aggressive behavior was most likely applicable to children who were predisposed in that direction. By "predisposition" the committee did not necessarily mean children who are mentally ill, but they certainly did not exclude this group from such predisposition. It remains to be seen how much more predisposed to the influence of television these children are than the so-called normal population.

More importantly, the controlled environment in which these children live lends itself both to systematic modification of television's influence and the measurement of such modification. Here, then, is a unique opportunity to explore the possibility of adding to the care of treatment of these children by converting what is now primarily a casual leisure-time activity into one with more tangible therapeutic benefits.

Social Policy Implications

Over the past few years, renewed public concern has been expressed about the effects of television violence. The American Medical Association (1976) has formally declared that violence on television is an environmental hazard. They have embarked on a national program of action to try to

improve the role television can play in the lives of American children. The national Parent Teachers Association has embarked on a similar effort. Major advertisers have expressed concern about this issue and have begun to withdraw their advertisements from programs that seem excessively violent. Network officials have renewed their pledge to decrease television violence.

All of these new public pressures will surely impact on programing decisions by the television industry. What is missing in all this is a large-scale planned procedure for constructive change. The problem falls into the general category of effective knowledge transfer and use.

Interestingly enough, this problem is one that has occupied NIMH for some years. The entire applied research program of NIMH has had as one of its objectives the development of procedures for improving the effectiveness of its research and development programs. In an important analysis of the problem, Glaser (1973) spoke to this very issue, especially as it impacts Federal funding agencies. He identified factors that facilitate this translation of knowledge into action. They include the soundness of the evidence, relevance to the operational problem, ease in understanding the results, and the readiness of the potential user to change standard practices.

The implementation of a large-scale plan for change in regard to television and children cannot be fully outlined before the fact. In a recent paper, this author made a suggestion for a start in this direction. It still seems like a worthwhile procedure to get beyond ad hoc efforts to improve television's influence on the child, especially on the institutionalized child, who may well be more vulnerable than the average child in his or her own home.

Efforts should be initiated to establish a long-term instrumentality, preferably outside the government and so organized as to avoid all the First Amendment problems, adversary pressures, or special interest influences. The central important attribute of any program is that it be able to continue over an indefinite period of time and that it be organized so as to elicit, where appropriate, involvement of the television industry, the public, advertisers, media specialists, and researchers in the academic community. The Government might provide funding and initial planning, but it should not be involved in the formal operation.

The major areas of activity might be: (a) a continuing research program to study ways of enhancing the value of television to the child viewer and to explore the impact of new technology on child development; (b) a clearinghouse and distribution center for periodic progress reports; (c) a public advocate role to provide testimony on matters relating to

children and television. (Certainly an annual violence index or a violence profile could be a part of such an effort.)

It is important to see the total task as a long-term endeavor. While we may be late in starting, it is not too late. The technology yet to be perfected is likely to be as powerful in its potential impact on the viewer, adult as well as child, as anything we have witnessed to date. Cable systems, including the use of two-way communication, portable miniaturized sets, cassettes, and other devices for recording and delayed rebroadcasting, all portend extended and increased use of television.

Perhaps the most challenging long-term implication is not just increased exposure to television but increased access to and participation in television itself. Closed-circuit community television, various devices for two-way interactive communication, the increased use of satellites for educational television experiments--all will modify the whole of television practices.

Establishing some instrumentality that can look at the problem in its larger framework--and as it relates to children--will help us to understand and evaluate the impact of these new developments as they come.

It has been said that there is a basic principle of medicine which could be used in setting guidelines for children's television programming: "First do no harm." Certainly, the mental health implications of children's television should be a major concern of all those involved in its production and evaluation.

It would be even more encouraging if the emphasis for the future would be to accentuate the positive. What is needed is not just to purge television of harmful programs for children. Children will watch television. Eliminating what is bad without offering a viable and positive alternative would be only half a step at best.

The potential of television as a positive socializing influence for children is yet to be realized. It is to that purpose that intensive research and policy efforts should be addressed in the future. (Rubinstein 1976, pp. 32-33).

Very recent efforts to develop such long-range mechanisms have come from a variety of sources. Of some relevant interest is the proposal by the Foundation for Child Development for the establishment of a National Observatory of Child Development. This proposal stems from an earlier national survey reported by Zell (1977). In that survey, incidentally, children who were reported to be heavy viewers of television were twice

as likely as other children to report that they "get scared often." The proposal for the National Observatory calls for a public corporation with a minimum lifespan of 15 years. It is intended to be supported by a mix of private and public funds. Its mission would include: conducting national surveys on how children are changing over time, exploring the developmental process itself over time, and conducting research and disseminating research findings to advance the scientific understanding of child development. Included in the topics to be considered certainly be the area of television and children.

Somewhat more focused on the topic of television is a comprehensive proposal for a National Endowment for Children's broadcasting. This is a report of a feasibility study, sponsored by the Markle Foundation, that calls for a major new effort to develop alternate programing to meet the needs of children. While there was no consensus on how to establish such a national resource--there were cogent arguments against making it either fully Federally funded or fully privately funded--the project outlines a long-term effort to upgrade broadcasting for children and to stimulate program research and formative research to achieve the goals of the entire operation.

In still another very recent development, preliminary efforts are underway to sponsor Federal legislation to establish a Television Impact Center whose purpose would be to monitor television programing and its effects on children, to sponsor research which would increase our knowledge and provide guidelines to improved programing, and to disseminate information to the public. This proposal is being initiated by Senator Wendell Anderson of Minnesota and is still in its early developmental state. Even if it does not materialize into a full-fledged program, it is indicative of the continued interest in meeting long-term needs.

Similar concerns for long-term efforts have been expressed outside the United States. In a major report to the British Broadcasting Corporation, Katz (1977) called for a comprehensive program of research. He recommended the establishment of a new foundation funded by public and private monies for this purpose. It is noteworthy that this report was sponsored and funded by the BBC and that Katz, an internationally known sociologist, made his report directly to and for the BBC. He identified a variety of important areas for further study, including studies of the media itself and of the audience, as well as studies of entertainment and news. Included in the list was a proposal to understand better how the images of society and the values inherent in those images are presented on television.

Ultimately, we must learn more about how television influences social values. Indeed, the television industry leaders themselves should be eager for such knowledge because the findings will undoubtedly show many positive influences as well as some negative effects. If television reflects public taste at all, as it must to some extent, it probably reflects positive values to a much greater degree than is recognized. On balance, children are most likely benefited more than they are harmed by television. The task is to document this hypothesis and to shift the balance even further in a positive direction.

All these efforts at establishing some long-term process to do something systematic about children and television are encouraging signs that attention is being paid to the need for continuity. It has been a recurrent failing in all previous approaches to effecting change in this area that the follow-through somehow never took place. Even the impressive Reston Conference (Ford Foundation 1976) which so successfully identified major priorities for future research on children and television resulted in essentially a 1-year effort by the National Science Foundation to stimulate new research in the field. The Ford Foundation itself virtually abandoned the area, despite its support and sponsorship of the Reston Conference.

It is important to put this criticism in proper perspective. Certainly each of the major individual program efforts since the work of the Surgeon General's program in 1969-72--and there have been a number of significant research advances--has helped to move the entire field forward. What has not materialized, however, is a mechanism whereby all the interested parties--parents, researchers, industry spokesmen, citizens' groups, advertisers, and government agencies--can have a continuing forum for collaborative progress toward improved television for children. Until that collaboration can be achieved, the full potential for the positive role television can have in the lives of our children will not be achieved. It is hoped that such an objective can eventually become a product of this effort by NIMH to explore new program directions on the theme of "Television as a teacher."

REFERENCES

- Adler, R. The Effects of Television Advertising on Children. Washington, D.C.: National Science Foundation, 1977.
- American Medical Association. Resolution No. 38. Violence on TV: An Environmental Hazard. Reference Committee E, 1976. p. 367.
- Bogatz, G.A., and Ball, S. The Second Year of "Sesame Street": A Continuing Evaluation. Princeton, N.J.: Educational Testing Service, 1971.
- CBS Broadcast Group. A Study of Messages Received by Children Who Viewed an Episode of "Fat Albert and the Cosby Kids." New York: Office of Social Research, Department of Economics and Research, CBS Broadcast Group, 1974.
- Chaney, D.C. Involvement, realism and the perception of aggression in television programmes. Human Relations, 23:373-381, 1970.
- Collins, W.A.; Berndt, T.J.; and Hess, V.L. "Social Inferences About Motives and Consequences for Televised Aggression: A Developmental Study." Paper presented at the meeting of the Society for Research in Child Development, Philadelphia, March 1973.
- Collins, W.A., and Getz, S.K. Children's social responses following modeled reactions to provocation: Prosocial effects of a television drama. Journal of Personality, 44:488-500, 1976.
- Comstock, G., and Lindsey, G. Television and Human Behavior: The Research Horizon, Future and Present. Santa Monica, Calif.: The Rand Corporation, 1975.
- Fechter, J.V., Jr. Modeling and environmental generalization by mentally retarded subjects of televised aggressive or friendly behavior. American Journal of Mental Deficiency, 76:266-267, 1971.
- Feshbach, S. Reality and fantasy in filmed violence. In: Murray, J.P.; Rubinstein, E.A.; and Comstock, G.A., eds. Television and Social Behavior. Vol. II. Television and Social Learning. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Feshbach, S., and Singer, R.D. Television and Aggression: An Experimental Field Study. San Francisco: Jossey-Bass, 1971.

- Ford Foundation. Television and Children: Priorities for Research. New York: Ford Foundation, 1976.
- Friedrich, L.K., and Stein, A.H. Aggressive and prosocial television programs and the natural behavior of preschool children. Monographs of the Society for Research in Child Development, 38:(4)151, 1973.
- Friedrich, L.K., and Stein, A.H. Prosocial television and young children: The effects of verbal labeling and role playing on learning and behavior. Child Development, 46:27-38, 1975.
- Frueh, T., and McGhee, P.E. Traditional sex-role development and amount of time spent watching television. Developmental Psychology, 11:109, 1975.
- Gerbner, G. Violence in television drama: Trends and symbolic functions. In: Comstock, G.A., and Rubinstein, E.A., eds. Television and Social Behavior. Vol. I. Media Content and Control. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Gerbner, G.; Gross, L.; Eeley, M.F.; Jackson-Beeck, M.; Jeffries-Fox, A.; and Signorielli, N. TV violence profile No. 8: The highlights. Journal of Communication, 27:171-180, 1977.
- Glaser, E.M. Knowledge transfer and institutional change. Professional Psychology, 4:434-444, 1973.
- Graves, S.B. "How to Encourage Positive Racial Attitudes." Paper presented at the Society for Research in Child Development, Denver, Colorado, 1975.
- Greenberg, B.S., and Reeves, B. Children and the perceived reality of television. Journal of Social Issues, 32:86-97, 1976.
- Hanratty, M.A.; O'Neal, E.; and Sulzer, J.L. Effect of frustration upon imitation of aggression. Journal of Personality and Social Psychology, 21:30-34, 1972.
- Kaplan, R.M., and Singer, R.D. Television violence and viewer aggression: A re-examination of the evidence. Journal of Social Issues, 32:35-70, 1976.
- Katz, E. Social Research on Broadcasting: Proposals for Further Development. A report to the British Broadcasting Corporation, January 1977.

- Kniveton, B.H., and Stephenson, G.M. The effect of pre-experience on imitation of an aggressive film model. British Journal of Social and Clinical Psychology, 9:31-36, 1970.
- Kochnower, J.M.; Fracchia, J.F.; and Rubinstein, E.A. "Television Viewing Behaviors of Emotionally Disturbed Children." Unpublished manuscript, Brookdale International Institute, 1978.
- Leifer, A.D., and Roberts, D.F. Children's responses to television violence. In: Murray, J.P.; Rubinstein, E.A.; and Comstock, G.A., eds. Television and Social Behavior. Vol. II. Television and Social Learning. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Liebert, R.M., and Poulos, R.W. Television and personality development: The socializing effects of an entertainment medium. In: Davids, A., ed. Child Personality and Psychopathology: Current Topics. Vol. II. New York: John Wiley and Sons, 1975.
- Lovaas, O.I. Some studies on the treatment of childhood schizophrenia. In: Schlein, J., ed. Research in Psychotherapy. Washington, D.C.: American Psychological Association, 1968.
- Mays, L.; Henderson, E.H.; Seidman, S.K.; and Steiner, V.S. "An Evaluation Report on 'Vegetable Soup': The Effects of a Multiethnic Children's Television Series on Intergroup Attitudes of Children." Unpublished manuscript, New York State Department of Education, 1975.
- Parke, R.D.; Berkowitz, L.; Leyens, J.P.; West, S.; and Sebastian, R.J. Some effects of violent and nonviolent movies on the behavior of juvenile delinquents. Advances in Experimental Social Psychology. 10:135-172, 1977.
- Ridberg, E.; Parke, R.; and Hetherington, M. The modification of impulsive and reflective cognitive styles through observation of film-mediated models. Developmental Psychology, 5:369-377, 1971.
- Roberts, D.F.; Herold, C.; Hornby, M.; King, S.; Sterne, D.; Whiteley, S.; and Silverman, T. "Earth's a Big Blue Marble: A Report of the Impact of a Children's Television Series on Children's Opinions." Unpublished manuscript, Stanford University, 1974.
- Rothenberg, M.B. Effect of television violence on children and youth. Journal of the American Medical Association, 234 (10):1043-1046, 1975.

- Rubinstein, E.A. Social science and media policy. Journal of Communication, 25:194-200, 1975.
- Rubinstein, E.A. Warning: The Surgeon General's research program may be dangerous to preconceived notions. Journal of Social Issues, 32:18-34, 1976.
- Rubinstein, E.A.; Fracchia, J.F.; Kochnowar, J.M.; and Sprafkin, J.N. Television Viewing Behaviors of Mental Patients. New York: Brookdale International Institute, 1977.
- Rubinstein, E.A.; Liebert, R.M.; Neale, J.M.; and Poulos, R.W. Assessing Television's Influence on Children's Prosocial Behavior. New York: Brookdale International Institute, 1974.
- Schwartz, T.H., and Bryan, J.H. Imitation and judgments of children with language deficits. Exceptional Children, 38:157-158, 1971.
- Singer, J.L. The Child's World of Make-Believe: Experimental Studies of Imaginative Play. New York: Academic Press, 1973.
- Sprafkin, J.N.; Liebert, R.M.; and Poulos, R.W. Effects of a prosocial televised example on children's helping. Journal of Experimental Child Psychology, 20:119-126, 1975.
- Stein, A.H., and Friedrich, L.K. Impact of Television on Children and Youth. Chicago: University of Chicago Press, 1975.
- Stein, A.H., and Friedrich, L.K. Television content and young children's behavior. In: Murray, J.P.; Rubinstein, E.A.; and Comstock, G.A., eds. Television and Social Behavior. Vol. II. Television and Social Learning. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Steuer, F.B.; Applefield, J.M.; and Smith, R. Televised aggression and the interpersonal aggression of preschool children. Journal of Experimental Child Psychology, 11:442-447, 1971.
- Surgeon General's Scientific Advisory Committee on Television and Social Behavior. Television and Growing Up: The Impact of Televised Violence. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Tannenbaum, P.H. Studies in film- and television-mediated arousal and aggression: A progress report. In: Comstock, G.A.; Rubinstein, E.A.; and Murray, J.P., eds. Television and Social Behavior. Vol. V. Television Effects: Further Explorations. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.

Tedesco, N.S. Patterns in prime time. Journal of Communication.
24:118-124, 1974.

Ward, S.; Wackman, D.B.; and Wartella, E. Children Learning To Buy:
The Development of Consumer Information Processing Skills.
Cambridge, Mass.: Marketing Science Institute, 1975.

Watt, J.H., and Krull, R. An examination of three models of television
viewing and aggression. Human Communications Research, 3:99-112, 1977.

Zill, N. National Survey of Children: Preliminary results. New York:
Foundation for Child Development, 1977.

Chapter 7. TELEVISION DRAMA AND COMMERCIALS: A Report on Content and Context With Emphasis on Women and Girls.

Muriel G. Cantor, Ph.D.

CREATING THE CONTENT

Most research on television has focused on the audience, and by comparison there has been little research on the people or the organizations responsible for the content. Several researchers who have been concerned with the effects of television on American life, culture, and personality have repeatedly suggested that research is necessary to first understand the communicator, the decisionmakers, and the entertainment industries before one can understand the effects or the impact of television (Lazarsfeld 1963; Bogart 1973-1974; Gans 1972). One commonality of all mass media of communications is that the production process is organized. Turow (1978) has suggested that the distinguishing feature of mass communications as compared to other forms of communication is not simply the large, heterogeneous audience or the public nature of the experience (Wright 1975) but rather the industrial type of setting in which the content is produced. Creators of television drama work in formal, complex bureaucratic structures which have an extensive division of labor. This means that the decisionmaking power on what is broadcast rests with a very few people. Often creative people working in a bureaucratic setting do not necessarily express their own values but rather the values held by those who control the bureaucratic structure (Mills 1953; Cantor 1971, 1972b, 1974; Johnstone et al. 1976).

Moreover, media creators often have to be concerned with more than one bureaucratic organization. According to law (Federal Communications Commission 1971), television content is the responsibility of the local stations. Yet, because of economic and audience pressures, television stations are dependent on several, varied types of outside organizations to provide the information and entertainment programs. If a television station is affiliated with one of the three major television networks (the National Broadcasting Company, the American Broadcasting Corporation, and the Columbia Broadcasting System), as are 85 percent of the commercial stations in the United States, then a large percentage of entertainment, news, and information programs is provided by the networks to the stations. The networks in turn depend on Hollywood production companies for dramatic

programs, on other production companies for game and variety shows, and on wire services for news. If a commercial station is independent and nonaffiliated with a network, it must buy programs from distribution or syndication companies who in turn buy the shows from production companies or the networks.

The above is a brief sketch of the complexities of media production. Besides the controls already mentioned, television is regulated by the Federal Communications Commission (FCC) and also must take into consideration the advertisers who finance the enterprises. The production and dissemination of public television, although different from commercial television, is also complex. Public stations too are dependent on others for programs, and creators of public television programs also work in bureaucratic organizations.

Producing Drama for Commercial Television

Most of the popular drama seen on prime-time television is produced in Hollywood, California, by three or four production companies. In the industry these are called program suppliers. At one time there were several active program suppliers, but as the number of dramatic series has gone from over 70 in 1960 to fewer than 40 in 1977, the number of program suppliers has also dwindled. These production companies are employers of the actors, writers, directors, and producers who manufacture the drama. Several investigators have tried to explain popular drama as either a reflection of the personalities of the creators (Greenberg 1969) or as the reflections of the economic values held by those who control the channels of communication (Cantor 1971; 1972b; 1974; Melody 1973).

The second explanation seems to hold up from the empirical evidence available. From the interviews conducted in 1974 and 1976 (Cantor, 1980), the interviews done 10 years ago (Cantor 1971; 1972b; 1974), and from other similar studies, it is clear that many of those working in Hollywood express values different from those found in the content of their shows. Most of the time these expressed values are more liberal than the values expressed in the drama. Actors, in particular, who make commercial advertisements for money or who have to accept any part offered to them in order to work in the medium where work is scarce, often appear in productions where the values expressed are opposite from their own.

Also, many directors and producers would like to make higher level television drama, drama which is more artistic or which has a social message. Some of these producers and directors think the networks underestimate the intelligence and taste of the audience, and some think the existing audience is the only one possible for a medium that

has as its essential function the merchandising of soap and patent medicine (Cantor 1971, p. 174), but both kinds of producers see themselves as different from the audience and agree that they subordinate their own personal values and tastes in order to work. The parts people play and the stories written, directed, and produced are rarely chosen by the creative people responsible for their production. Only the unusual director or producer, writer, or actor, one with considerable power in the marketplace, has the freedom of choice in the selection of content.

Of course, writers who work on a freelance basis can write anything they wish. However, writing on speculation is a risk because it is difficult to find a buyer for a completed product. Most writers work on consignment, developing stories for which the plot has been approved by the on-the-line producer and the program supplier who act as filters for the networks who broadcast the programs. Those with the power or recognized talent to operate with relative freedom do not usually choose commercial television as their medium but rather choose the theater, film, or stage drama.

Television drama has become the medium for those who at this stage of their careers are practically powerless to choose content. Television program creators rarely have artistic control over their product. It could be said that for those who are able to work in the Hollywood production companies which supply programs to the networks, the value of working at their craft, regardless of the content they must create, is more important than the value of freedom and autonomy to select the story and method of presentation.

Disseminating the Content

While the manufacture of drama is concentrated in three or four production companies, its dissemination is dominated by the three networks. In 1960, control shifted from the advertisers, program producers, and the stations to the networks. In the early days of film production, the dramatic series and filmed anthologies were made by program producers such as Hal Roach Productions, Desilu, Screen Gems, Revue Productions (the subsidiary of the Music Corporation of America, now Universal Studios), and many others. Advertisers and entrepreneurs made pilot films for series which were sold to individual agencies who then purchased television time (Barnouw 1970, 1975). One producer interviewed in 1967 complained that he had only three potential buyers for his productions, while in the early days of television (only 10 or 12 years before), there were 30 or 40 possible buyers. The quiz scandals in 1959 and the Congressional hearings concerning industry practices which followed are said to be responsible for the change in control (Melody 1973). Whatever the reasons, by the mid-sixties the networks had secured

the control of dramatic television films. From that time to the present, little drama has been made without direct approval and financing from one of the three networks.

Even before a script is written, the story idea is presented to one of the network executives. After a pilot script is written and paid for by the networks, there is still no guarantee the pilot film will be made. The decision to make the pilot film into a series or even to show it on the air again rests entirely with the networks unless a program supplier is willing to risk a large sum of money. Only the networks have the power to decide what will be broadcast through their affiliate-and network-owned local stations. If producers are unable to change their style to fit the newest wishes of the networks, they do not continue to work in the medium.

Content and format of dramatic television have been changing constantly since television first became a national mass medium. For instance, by 1967, when I began to study the industry, the dramatic anthologies which had been popular in the fifties and early sixties had practically disappeared from the air. Video-taped drama, now so prevalent, was rarely seen on the air, and movies for television were just beginning to be produced as a major part of the programming schedules. Presently, the short series (mini-series) of 5 to 10 episodes are gaining popularity. Also there have been changes in themes which imperfectly reflect the changes in work and family life for women and men. The point here is that television drama, both in form and content, is not static. However, most changes for the last 20 years are the direct result of network adoption.

The networks decide, for instance, how many shows will be seen during a season. In 1954, the number of regular episodes being made during the season was 39; the present number is 24. Moreover, new programming schedules include fewer dramatic series than were on the air in the 1950s. A continuing series provides more work for producers, directors, actors, and writers than the movies made for television or the mini-series. Because of the increased showing of movies made for theater distribution and movies made for television, mini-series, and specials, there are fewer and fewer long series made each season. This means less work for the creative people. Thus, there is little opportunity to work in television dramatic production, and when work is available, the creative freedom so greatly valued by the creators of cultural symbols is limited by the networks who select what will be produced, who censor content once a show is in production, and who have power over scheduling the show on the air.¹

¹ For a more detailed description of the social context of dramatic production, see Cantor 1980.

A Note on Employment

Thus, freedom, autonomy, and employment opportunities in the studios and production companies are limited for all creative people. However, women in the industry have more problems than do the men. As will be shown later in this report, there are fewer parts for women actors than men. The Screen Actors Guild reports that 3,000 out of 36,000 members earned over \$10,000 in acting in 1976. Of those 3,000, only 400 were women (Cantor and Peters, 1980). There are few women directors, few producers (there were no women producers of television series in 1970), and only 20 percent of the membership of the Writers' Guild of America-West are women. Women are found in the studios and production companies, of course. They are in charge of wardrobe, sometimes in charge of makeup, and they serve as "script-girls" and assistants. Whether their numbers are increasing in management is unknown because equal employment regulations imposed by the FCC on the stations do not apply to production companies.

While there is some indication that the numbers of women have increased at the station level in both managerial and on-the-air positions as broadcasters, they are still clearly a minority in the higher level decisionmaking positions (Jennings and Walters 1977). Moreover, as stated earlier, the stations are not responsible for dramatic television.

From this analysis, it seems that the networks have great power in selecting the shows that are seen on commercial television. There are almost no women in decisionmaking jobs at the network level. At this writing, in all three networks combined, there are only three women executives who are in the higher ranks where programing decisions are made. This is an improvement, however, over 10 years ago when there was none.

Creating Public Television for Children

Public television grew as a response to commercial television with the passage of the Public Broadcasting Act in 1967. Its structure is complex and diversified. In 1974, there were 245 public television stations. While this is a relatively small number compared to the number of commercial stations throughout the United States (over 1,000 UHF and VHF combined), public television is viewed by approximately 20 million homes a week in the United States (Lyle 1975). The purpose of public broadcasting is both to entertain and to inform with high quality alternative programing unavailable from the commercially operated stations.

As an industry, public broadcasting is small. Within the communication industry, public broadcasting accounts for less than 1 percent of employment, and public broadcasting employees account for about 8 percent of

those employed in radio and television broadcasting. As in commercial broadcasting stations, employees, including decisionmakers, have little freedom or control over the broadcast schedule. While publications from the various public broadcasting system operations stress the autonomy of local stations, in reality these stations (with a few exceptions) depend on the programs which are broadcast over the Public Broadcasting System (PBS) interconnection for most of their primetime programming and for the bulk of the programming offered to children.

The structure of public television as it has evolved in the United States is very complex. There are three large bureaucratic structures, each supported either directly or indirectly by the United States Government (but are not government agencies), which have some responsibility for the programs that are broadcast. These are the Corporation for Public Broadcasting (CPB), the Public Broadcasting System (PBS), and National Public Radio (NPR) (not relevant to this report).

The umbrella organization, CPB, is not a broadcast organization, nor is it a production company. Most of the monies allocated by Congress to CPB are dispersed to various local public television stations as community service grants. CPB also funds the total operational programming expense of NPR and PBS. In addition, CPB funds the piloting and development of specific new programs and series. However, support from CPB does not guarantee a program will be seen through public television stations. The decision of what to broadcast on the air rests with the local station. Because of costs, public stations are unable to produce enough programming to fill their program hours. PBS, although not a network but rather a transmittal service, provides 40 hours of programming a week over its interconnection. PBS transmittals are seen at least once a week in most localities which have public broadcasting facilities, and frequently programs are repeated several times during a broadcast week.

The reason for claiming that PBS is not a network is that it neither produces nor selects the programs broadcast over the interconnection. Programs that are produced by local stations or production companies, such as Children's Television Workshop and others, are selected by a complicated mechanism through which local stations participate. Local stations supplement the CPB grants with dues collected from community members of the audience (who are likely to be white, middle class, well educated, and relatively affluent), from corporations and businesses, from foundations, and from direct support from State and Federal Government agencies.

Although many local stations act as production companies and make pilot shows, they compete for a few hours of broadcast time with each other and the nonprofit educational production companies. The larger and more

affluent stations clearly have an advantage over the smaller and poorer ones. Shows from Boston, New York, Los Angeles, and Washington are more likely to be seen on the air than shows from stations in other areas of the United States. Also the stations, such as Boston, buy dramatic offerings from Europe (especially England) because it is possible to produce quality drama for less money in Europe. These are then broadcast over the interconnection.

In contrast, the children's programs are made in America and are clearly designed to meet what psychologists and policymakers believe is lacking in commercial shows (Lesser 1974). The largest portion of PBS time is given to transmitting children's shows, and these shows are often shown 3 times a week in some localities. In one 4-week period (Jan. 28-Feb. 24, 1974) there were 60 children's programs shown to a cumulative nationwide audience of over 25 percent of the Nation's television household (Lyle 1975).²

Employment in Public Broadcasting

According to fiscal year employment statistics reported to CPB by licensees (both radio and television stations), women held a little over 30 percent of all jobs in public broadcasting (Lee et al. 1977). These figures include clerical and secretarial jobs as well as managerial, on the air, engineering, technical, and others. From these data, it is clear that there are few women top executives. Only in the position of business manager where women hold 45 percent of these positions are women approximately equal to men. From these data and from data collected by the Task Force on Women in Public Broadcasting (Isber and Cantor 1975), a clear pattern emerges. The pattern begins with initial hiring process, by which men tend to be hired at more responsible jobs and higher salaries than women of equal education and experience. There is a predominance of men at the hiring and decisionmaking levels of the industry. Also, the boards of trustees and other policymaking groups that govern the activities and policies of public broadcasting tend to be dominated by men.

As with commercial television, there is not much data on employment at the production companies. However, in public broadcasting, the local stations are often production companies for shows that are seen nationally. Several of the shows for children that are on the air or have been in the recent past were originated and produced by women (Sesame Street and Carrascolendas).

² The issues brought up in this section are also discussed in Cantor 1977, 1978; Isber and Cantor 1975.

THE CONTENT--SEX-ROLE PORTRAYALS

This section of this report is divided into three subsections: The first is a discussion of how the sexes are portrayed on public television's programs for children; the second discusses the same subject, focusing on programing for adults; and the third examines programing for children. Programs include regularly scheduled drama and commercial advertisements. There has been a great deal of methodological criticism of content analysis partly because people who do content analyses often forget that reliability depends on consensus and that subjective judgments are difficult to validate. Also, even when the methodology is not questioned, the data obtained are used for purposes that cannot be justified. For instance, there is no way that one can go from the content to the effects on viewers; nor can the content tell us the intention of the communicator. Systematic content analysis should give a straightforward description and analysis of the manifest content of the communication. However, it is possible to draw inferences about the society by doing content analysis because such analysis provides us with the necessary perspective and the accurate, sociologically important data on what is seen on American television. Because it is impossible for a lone person to view all television drama, systematic content analysis is necessary (see Wright 1975).

The content analyses reported are not being critically reviewed for methodological problems. While there are a variety of techniques used by different kinds of researchers with a wide range of support (some were done by volunteers, some by groups with Government funds, some with other support), there is a strong consensus over time on the important data--the number of females as compared to males and the occupational roles assigned to each sex.

Children's Programs on Public Television

There have been several content analyses of the children's programs on public television. The most complete of these so far was done by the Task Force on Women in Public Broadcasting (Liber and Cantor 1975 Cantor 1977). An earlier analysis done by Dohrman (1974 and 1975) and the analysis by the Women's Task Force report similar findings. The Women's Task Force examined and compared the images, positions, and sex-role assignments of male and female characters. Data were collected on all children's programing that came over PBS interconnection during the week of January 19-26, 1975. Six series of children's programs were

monitored--Sesame Street, Electric Company, Villa Alegre, Zoom, Carrascolendas,³ and Mister Rogers' Neighborhood. Sesame Street accounted for the largest segment of time devoted to children because each program is 1 hour long, whereas the others are only one-half hour in length.

Table 1 shows the sex of the characters appearing on the programs. Table 2 shows the sex of the characters portrayed in occupations. Because the absolute number of role assignments for males is so much greater than for females, the range of occupations is also greater for males. Females were shown in a few nontraditional occupations such as assistant boiler engineer, clown, theatre and film director, and ice-cream vendor, but the males were shown in a wide range of occupations such as doctor, librarian, actor, chef, newscaster, customs agent, and hockey player. Also, as many others have pointed out, the Muppets on Sesame Street are all male (Isber and Cantor 1975).

Table 1.

Characters Appearing on Children's Television Programs

	<u>Female (N)</u>	<u>Male (N)</u>	<u>Male %</u>
Sesame Street	(83)	(299)	78
Electric Co. 2	(76)	(167)	69
Villa Alegre	(63)	(141)	69
Zoom	(99)	(112)	53
Carrascolendas	(22)	(21)	49
Mister Rogers' Neighborhood	(19)	(53)	74

Table 2.

Characters Portrayed in Occupations

	<u>Female (N)</u>	<u>Male (N)</u>	<u>Male %</u>
Sesame Street	(10)	(72)	88
Electric Co.	(21)	(50)	70
Villa Alegre	(11)	(46)	81
Zoom	(4)	(16)	80
Carrascolendas	(4)	(11)	69
Mister Rogers' Neighborhood	(8)	(30)	79

³ Carrascolendas is no longer being transmitted over the PBS interconnection.

Commercial Programing--Adults

The evidence concerning males and females on commercial television programs is similar to that on public television. In most programing except soap opera, females are outnumbered by males and given limited roles. In primetime dramatic programing (the series mostly), women and men are presented according to patterned expectations. The content analyses done by the Cultural Indicators Project at the Annenberg School of Communication (see Gerbner 1972; Tedesco 1974; Gerbner and Gross 1974) show that sex, age, and occupations in primetime series add up to a complex dramatic demography (Gerbner 1972, p. 47). In the case of characters analyzed, three-quarters are male, American, middle and upper class, unmarried, and in the prime of life (p. 45). Women typically represent romantic or family interest, close human contact, and love. Males can act in nearly any role, but rare is the female part that does not involve at least the suggestion of sex. Most women who are cast in other than romantic or family roles are marked for impotence or death (pp. 45-46).

Those involved in this project have been analyzing primetime series since 1967. In a summary article of the data, Tedesco (1974) reports that during the years 1969-1972 there were 556 male leads and 219 female leads in the primetime series. Male-female differences in employment and marital status are striking. More than half the females are married, compared with less than one-third of the males. Almost two-thirds of the female major characters have no discernible occupation. Females are presented as lacking independence. They are not usually found in adventure situations; they are younger than the men, more likely to be married, and less likely to be employed.

These findings are similar to those by Seggar and Wheeler (1973) who analyzed formal occupational roles in 250 half-hour segments of daytime and nighttime television. They found 82 percent were male. Majority (white) men were in higher status occupational roles than minority men. Every content analysis of dramatic programing yields similar results. Starting in 1954 with a study by Head and the further analyses done by DeFleur (1964) by the Cultural Indicators Project, and most recently by Lemon (1978), it can be shown that women appear less often on television. Also when they are on screen, they usually are shown in less prestigious jobs as well. In 1975, in the crime and situation comedies there were 471 white men and 192 white women, 140 black men and 37 black women in the sampled interactions coded by Judith Lemon. For further discussion of this issue, also see Window Dressing on the Sets (A Report of the United States Commission on Civil Rights 1977).

The most complete of the content analyses on television commercials have been done by women's groups in order to document the legal argument concerning the treatment of women and women's issues on television as part of license renewal challenges. Courtney and Whipple (1974) compared four different analyses of women in television commercials. Two of these were originally part of license challenges (Cantor 1972a; Hennessee and Nicholas 1972). Although each of these studies can be rightfully criticized on methodological grounds, the consistency of the findings among them tends to mitigate the methodological issue. Courtney and Whipple conclude that the four studies provide evidence that women are not portrayed as autonomous, independent human beings, but are primarily sex typed. They go on to say that if the results are viewed from the perspective of the feminist movement, the criticisms are justified. Moreover, women's roles in society continue to change and expand at a faster rate than the advertisers' response during that time covered by the studies (1972-1974). Advertisers are lagging far behind role changes in their portrayal of women.

The Screen Actors Guild (SAG) also has done two content analyses, one, in 1974, of commercials in 1973, and the other, in 1977, of commercials in 1976. Their interest is in the employment of actors, especially female actors, because of the high unemployment suffered by Guild members. They report little change in the roles for women in the 3 years--in 1976, 68 percent of the roles were given to male actors. Also, there has been no change in the percentage of women who are narrators (voice-over). All earlier studies, as well as the SAG 1976 study, report 90 percent of speaking off-camera principles are male. Also see Dominick and Rauch (1972) for similar findings.

Commercials and Programs for Children

In all content analyses of children's programs, both those of commercials (Barcus 1971; Schuetz and Sprafkin 1978) and those of programing (see Busby 1975 for overview), the results are the same as in adult programing. On children's programing, males outnumber females by more than two to one. In the most recent study of commercials, out of a total of 2,226 characters, 62.8 percent were male. Schuetz and Sprafkin (1978) account for the relatively high percentage of females by noting that in the spot announcements (p. 73) there were no significant sex differences for child characters (56.4 percent male). They suggest that television is teaching our children that boys and girls are equally important but that men are more important than women. Their evidence for this is weak. What little evidence does exist suggests that in the cartoon shows (animated cartoon dramas), girls are a clear minority (Hilliard 1972; Hoffman 1972; Streicher 1974). The results of these also show that the few adult females in the cartoons are portrayed in domestic roles.

In order to fulfill the research requirement for advanced degrees, Busby (1974) and Dohrman (1974, 1975) examined the way sex roles are presented to children. Busby looked at only commercial television, Dohrman looked at both commercial and public television (see above). Another recent analysis of commercially produced children's programs has been done by Sternglanz and Serbin (1974) who examine sex-role behavior rather than role types.

Busby (1974) found that there are 34 major male characters as compared to 14 female characters and 66 minor male characters to 17 minor female characters in the cartoon shows examined (p. 70). The major male characters are shown in 42 different occupational roles, while the females are shown in only 9. The married women in the cartoons are never shown in jobs outside the home. The few women who did work for a living are clearly identified as single (p. 96). Her findings are similar to those of Dohrman, Hilliard (1972), and Hoffman (1972). Long and Simon (1974), who also examined children's programming and found similar patterns, conclude that those viewing the cartoon shows will not gain any insights into new roles or perceptions that many women have of themselves or want for their daughters.

RESEARCH ON THE IMPACT

Over the past 25 years, a growing and substantial body of research has addressed the question of what effect television violence has had on children. Although both the research findings on television and film violence and other child development literature would lead one to believe that television should affect boys and girls differently (see Murray et al. 1972, pp. 36-40), the findings reported by the Surgeon General's Report (Surgeon General's Advisory Committee 1972) is that sex is not a "common origin variable" of aggressive behavior in children. However, the report devotes only one paragraph to three studies which relate sex to television effects. This is questionable reporting. As documented below, many of the studies conducted as part of the Television and Social Behavior project which are the basis of the report do have data on boys and girls. Because the orientation of the report is to prove a case against television violence or fail to prove it, the report plays down analyses which might show antecedent or mitigating causes. Class, race, family interaction, as well as sex, are either dismissed or relegated to a lesser position. As an aside, the most serious criticism that can be made of this is that, instead of being scientific, the report itself can be compared to a legal brief in which television content is the presumed guilty party.

Not only does the Surgeon General's Report misstate the data from the studies conducted by Television and Social Behavior Project, but the studies themselves either neglect girls or ignore the findings on sex differences. The Surgeon General's Report consists of 40 original studies, many of which have little to do with the effects of television on social behavior and even fewer on the relationship of television and violence on aggressive or antisocial behavior. The history of this report and the clamor caused by its findings are political issues, as has been documented by Cater and Strickland (1975). The report generated several review articles as well as considerable press coverage. In the review articles and the news reports, there is almost no mention of what effects viewing might have on girls. For instance, Bogart (1972-1973), in a major article summarizing each study done as part of the Surgeon General's Report, mentions only boys and children. The word "girl" does not appear once in the article. Dorr et al. (1974) also report findings from the Surgeon General's Report, as well as other literature on television and violence, that females seemed not considered in this research. This is peculiar because in her own research, Dorr is one researcher who has data on sex differences. Moreover, in the review article she and her co-authors review the findings on sex differences among adults.

In a recent Newsweek issue (Feb. 21, 1980) five pages are devoted to "What TV Does to Kids." Age, race, and class are mentioned as factors which mitigate the effects of television viewing but sex is not mentioned. Comstock reviewed the literature relating to television and social behavior in a series of reports. Three are relevant to this issue, and none mentions girls (1975a; 1975b; 1978).

In a secondary analysis, Cantor and Orwant (1980) looked at all of the studies in the Surgeon General's technical papers (except those in Comstock and Rubenstein 1972, because there were no reports on children in that volume) which include children and address even peripherally the issue of violence and television to see if (1) the sample or subjects include both boys and girls, (2) when both sexes were studied, if differential effects were or were not found, and (3) if such effects were found, what these data show.

In all, 26 studies were examined. The studies can be summarized as follows: Seven studies do not have girls as subjects or part of the sample, only boys. There are no studies of only girls. There are 14 studies in which the data are analyzed by sex of the subjects. In eight of these there are clear differences between the sexes. The usual differential effect is that boys become more aggressive (antisocial) after viewing violence; girls do not. However, some of these studies are not testing the relationship between viewing violence and aggressive behavior. The analysis shows that in most studies girls react or respond differently from the boys. Four studies have girls and boys in the sample, but if there were differences between the sexes, it is impossible to know since the findings are reported for the combined sample only. In the one remaining study, it is unclear if the subjects include males and females since only "adolescents" and "students" are mentioned.

Since the Surgeon General's studies were done, there has been more interest in studies on girls. However, this interest is not in aggression and violence. The studies are concerned with a seemingly different issue--sex-role socialization (Frueh and McGhee 1975; Sternglanz and Serbin 1974; Greenberg and Atkin 1975) and the lack of "positive" role models presented to girls (Busby 1975); also there is work in Europe where sex differences are considered. Werner (1975) studied a television campaign to interest students in books. Her data were analyzed not only by sex but also by class. She found that sex differences are greater among children of blue-collar workers than among children of white-collar workers.

In Sweden there has been a great interest in "identification" with television characters (Feilitzer and Linne 1975). Identification is a process in which individuals consciously seek to reinforce their own identities. Sex is an important factor in this process. Findings from studies show that boys identify with boys (p. 53), and although the review article quoted above does not say so, it is implied girls identify with girls.

Research on Effects of Television Advertising

Television advertising has become a controversial issue among consumer and public interest groups. This controversy has generated speculation on the effects of certain kinds of advertisements on both the mental and physical health of children, but as of now, the empirical evidence is not conclusive as to how viewing commercials affects behavior. Most research in consumer socialization and behavior has been done either by marketing researchers or by public interest groups such as Action for Children's Television. While the research findings are inconclusive, there is little disagreement that the young audience is widely accepted as one of the most lucrative. Some have accused industry of making the child a lobbyist in the home. Melody (1973) reports that advertising is a \$4 billion a year industry, and more than \$400 million a year is spent to convince children to buy. Foods and toys make up the bulk of the advertisements. These are the products that some consumer groups think are harmful to children. Cereals and other highly sugared foods, such as candy and gum, are considered unhealthy. Toys may be poorly made and easily broken and thus psychologically damaging.

Several behavioral scientists concerned with consumer behavior and marketing researchers as well believe that children and adolescents influence many purchases in the family. Frideres (1973) found through interviews with children between the ages of 5 and 8 years and their parents that the majority of children had first heard of their most desired toy on television. The majority of parents said that the child's desire was the reason a toy was purchased.

The repetitive nature of television advertising and the pairing of attractive outcomes with advertised products (or unattractive outcomes with failure to use advertised products) have led some to suggest that learning from advertising can be likened to classical and instrumental conditioning (Bandura 1969). Advertisers and industry representatives argue, however, that advertising teaches children how to make choices between products and that it is necessary for consumer socialization.

The subject of advertising and children is of growing interest to communication researchers. (Journal of Communication, 1974; 1977; Communication Research 1975). Although researchers have studied the effects of television advertising on children's cognitive beliefs and verbally expressed attitudes (Robertson and Rossiter 1974, 1977) there is lack of evidence as to what effects this advertising has on the behavior of children.

In the 1977 article, Robertson and Rossiter suggest that one reason for the lack of conclusive results from the purely psychological studies is that the "characteristics of the receiver" are not considered in the research. They advocate that the various dispositions which people bring to the communication transaction might be mitigating or alternative influences to media effects. Using a test-variable model, in which television advertising exposure is the independent variable and age, peer integration and parental education are intervening (dispositional) variables, they then test to see how children request advertised items (dependent variable). Although I have no disagreement with their major design, I am curious why television advertising exposure is not the intervening variable and the others independent variables and, more importantly, why sex again is left out of the analysis. The model is developed from findings from previous research, particularly that done by Scott Ward and his associates.⁴ In the research done by Ward et al. for the Surgeon General's Report, the samples included children of both sexes, but the data again were not analyzed by sex. In the research by Robertson and Rossiter, the sample consists of 289 first, third, and fifth grade boys who were surveyed as to what they wanted for Christmas. They say that because of the difference in the nature of the presents requested and simplification of the analysis, they limited their sample to boys, but they expect the findings would apply similarly to girls.

If we are to understand the way socialization occurs and the role of television in the socialization process, it is necessary to understand how social roles modify or influence consumer attitudes and behavior and to understand in more depth those social structural characteristics that influence consumer socialization. Certainly sex is a major demographic and structural characteristic that must be considered. This consistent neglect of girls in the research process will be discussed in the conclusion.

⁴ See Rubinstein et al. 1972, pp. 432-567, for the research reports done by Ward and his associates for the Surgeon General's Report.

CONCLUSION

From this report, a clear pattern emerges. Women are underrepresented in every aspect of broadcasting, from the inception of a project to the research on the impact of the programs. Although this generates a number of questions, two are particularly important to the research on how and what children learn from television. One question is "Why have researchers neglected until very recently the influence of television viewing on sex-role socialization?" The second question, which concerns the employment of women at the higher administrative and creative levels, is "Would more women in production, creation, and dissemination make a difference in how women are portrayed on the air?" Although the two questions are seemingly unrelated, both connect television viewing to the content and the context of how television is produced, something rarely done.

Sex-Role Socialization and Television

Most theorists, including Freud (1933), Mischel (1966), and Kohlberg (1966), emphasize that children learn appropriate sex-role behavior by observing male and female role models. Modeling is considered to be an influential source of behavior acquisition and a highly effective method of teaching behavior. Lesser (1974) and others such as Bandura believe children model both attitudes and behavior from what they view on television. While it would be simplistic to think that television provides the only sex-role models for children to emulate, the argument is made that because children do watch television for so many hours a day, television must influence the way they define masculinity and femininity.

Elsewhere I have argued that the two problems--sex-role socialization (so little studied) and aggressive behavior (so frequently studied)--are not separate problems but are two sides of the same coin (Cantor and Orwant 1980). I must agree with Gerbner and Gross (1976) that the problem is not whether television stimulates viewers to violent and aggressive action, but whether it teaches other things of far more reaching consequence. More importantly, it may be teaching boys different things from those it teaches girls. If Gerbner and Gross are right in that television teaches the role of victim and the acceptance of violence as social realities, girls and women might be more susceptible to this message. Gerbner's data bear this out for women, but as of now, this has not been tested on children.

The review of the Surgeon General's studies shows that when the problem is conceptualized as a stimulus-response relationship, boys are more likely to act out "masculine" response than the girls are. (For review

see Dorr et al. 1973). When aggression is defined or conceptualized with masculine characteristics, such as hitting or pushing, there are likely to be strong sex differences in the results of the experiments. Boys are defined by others and by behavioral measures as more aggressive than girls (McIntyre and Teevan 1972). When aggression is self-defined, such as in the Dominick and Greenberg (1972) study, there seems to be little difference between the sexes on the measures of aggression as related to television viewing. It may be that girls fantasize about violent or aggressive solutions to problems as much as boys do. In other words, in action boys are more aggressive than girls, but when one measures fantasies or attitudes, there is little difference between the sexes. This seems a reasonable hypothesis that might be tested. However, at this time the evidence is weak because so many of the studies simply ignore girls. Greenberg (1972) muses over whether girls learn the same things as boys from television. If the studies continue to ask the same questions with the same assumptions, we shall never know.

Some people are beginning to ask new questions (see Sprafkin and Liebert 1978; Greenberg 1975). Still there is some research on television and violence in which the sample contains no girls. While these studies may show a direct relationship between viewing violence and behavior (Muson 1978) or not (Milavsky 1977), the researchers are not aware that they are studying sex-role socialization in disguise.

The television and violence research is not the only research in which girls have been ignored. This is a general failing in all the deviance research of which television and violence are only a small part. Harris (1977) uses both males and females in studies. Discussing theories and research on deviance, he points out that there is a critical weakness which results from the continuing failure to consider females and consequently the sex variable in such theories. He goes on to say that using the variable in deviance research will have dire consequences for many of the accepted theories of deviance and that we should do more than merely take account of sex--we should start with it.

Employment of Women and Content of Television

Would more women in the production and creation of television make a difference in the way females are portrayed on the screen? From the evidence, it does not seem that women would create differently from men in the same organizational and structural situations. Both Sesame Street and Carrascolendas were originated and produced by women. Therefore, one could argue that the employment of women in decisionmaking and with creative responsibility does not guarantee that more female roles would be available. In a study of prospective journalists and broadcasters, Orwant and Cantor (1977) found that women journalism students hold the

same stereotypes as men concerning the kinds of entertainment and news women want to read or view. Although studies of communicators are increasing, no one has addressed the question of whether or not women are more likely to produce, create, and disseminate programs with more females in the cast of characters.

The employment issue is an important one on its own merits. Government agencies, such as the FCC (1971), the National Endowment for the Arts (1976), Ennis and Bohin (1977), and the United States Commission on Civil Rights (1977), have been investigating the employment issue and collecting statistics on employment patterns in media industries and the related arts. The FCC and the U.S. Commission on Civil Rights are particularly concerned with the fact that minorities and women have been systematically denied access to the television screen. This is not only an issue concerning the models presented to children and adults but also an equality issue. If females only appear in about one-third of all the roles available, clearly they are employed less often as actors than men.

As an equal employment issue, the employment of women both in front and behind the screen has concerned civil rights groups and women's organizations since 1970 when the National Organization for Women first petitioned the FCC to make its EEO rule fully applicable to women. One result of this concern is new research on employment patterns. Most of that research, however, can be labeled manpower studies or labor studies. As mentioned in other parts of this report, there are serious employment problems in the production enterprises associated with television drama, and therefore the employment of women is seen as an economic issue rather than one which would influence the education of children.

Several researchers and scholars who are concerned with the position of women and the content of television take a pessimistic view on the possibility of change. Gerbner (1978) is the most pessimistic of all. He states that the image of women is changing on television, but it is changing for the worse. He also believes that the structure of the industry is not changing, and although there is a new kind of woman out in the real world, her image is not being portrayed. Moreover, the gap between reality and the media portrayal is widening.

If one accepts a reflection hypothesis to explain the content of television, the dominance of men in all aspects of broadcasting is an indicator of the social position women occupy in the larger social structure. While it is possible that more women might be hired in positions of importance in the near future, it is unlikely that programing will change unless there are important structural changes in the society. Two things are working against change: One is the deep-seated cultural tradition for the subservience of women, and the other is the way the broadcast industry is structured. Entrenched bureaucracies are difficult to penetrate. With the industry contracting production and with the networks able to control the schedule, the prospects for change are limited.

REFERENCES

- Bandura, A. Social learning of identificatory processes. In: Goslin and Glass, eds. Handbook of Socialization Theory and Research. Chicago: Rand McNally, 1969.
- Barcus, F. "Saturday Children's Television: A Report of Television Programming and Advertising on Boston Commercial Television." Unpublished manuscript, Action for Children's Television, 1971.
- Barnouw, E. The Image Empire. New York: Oxford, 1970.
- Barnouw, E. Tube of Plenty. New York: Oxford, 1975.
- Bogart, L. Warning: The Surgeon General has determined that TV violence is moderately dangerous to your child's mental health. Public Opinion Quarterly, 36(4):491-521, 1972-1973.
- Bogart, L. The management of mass media. Public Opinion Quarterly, 37(4):580-589, 1973-1974.
- Busby, L.J. "Sex Roles as Presented in Commercial Network Television Programs Directed Toward Children: Rationale and Analysis." Unpublished doctoral dissertation, University of Michigan, 1974.
- Busby, L.J. "Sex-Role Research on the Media." Journal of Communication, 25(4):107-131, 1975.
- Cantor, M.G. The Hollywood TV Producer: His Work and His Audience. New York: Basic Books, 1971.
- Cantor, M.G. Comparison of tasks and roles of males and females in commercials aired by WRC-TV during composite week. In: Women in the Wasteland Fight Back: A Report on the Image of Women Portrayed in TV Programming. Washington: National Organization for Women, National Capital Area Chapter, 1972a.
- Cantor, M.G. The role of the producer in choosing children's television content. In: Comstock and Rubenstein, eds. Media Content and Control. Vol. I. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972b.
- Cantor, M.G. Producing television for children. In: Tuchman, ed. The TV Establishment. Englewood Cliffs: Prentice-Hall, 1974.

- Cantor, M.G. Women and public broadcasting
Journal of Communication 27 (1): 14-19.
- Cantor, M.G. "Where are the women in public broadcasting?"
In: Tuchman, Daniels, and Benet, eds. Hearth and Home.
New York: Oxford University Press, 1978.
- Cantor, M.G. Prime-Time Television: Content and Control.
Beverly Hills: Sage Publications, 1980.
- Cantor, M.G. and Orwant J.E. "Differential Effects of
Television Viewing on Girls and Boys" In:
McCormack, ed. Studies in Communication A Research
Annual. Vol I. Greenwich, Conn. JAI Press, 1980.
- Cantor, M.G. and Peters, A.F. "The Employment and unemployment
of Screen Actors in the United States" In: Hindon,
Shanahan, MacDonald, eds. Economic Policy for the Arts.
Cambridge, Mass. Abt Books, 1980.
- Cater, D. and Strickland, S. TV Violence and the Child: The
Evolution of the Fate of the Surgeon General's Report.
New York: Russell Sage Foundation, 1975.
- Comstock, G. "Effects of Television on Children: What Is the
Evidence?" Paper presented at Telecommunication Policy
Research Conference at Airlie House, Airlie, Va., 1975a.
- Comstock, G. The evidence on television violence. In: The
Rand Paper Series. Santa Monica: The Rand Corporation,
1975b.
- Comstock, G. "Television and Social Values." Unpublished paper
prepared for the National Institute of Mental Health.
Washington, D.C., 1978.
- Comstock, G. and Rubinstein, E., eds. Media Content and Control.
Vol. I. Washington, D.C.: Supt. of Docs., U.S. Govt. Print.
Off., 1972.
- Courtney, A.C. and Whipple, T.W. Women in TV commercials.
Journal of Communication, 24(2):110-118, 1974.
- EdFleur, M. Occupational roles as portrayed on television.
Public Opinion Quarterly, 28:57-74, 1964.
- Dohrman, R.M. "Children's Television Programming: A Sex
Socialization Agent." Unpublished master's thesis, Drake
University, 1974.
- Dohrman, R.M. A gender profile of children's educational TV.
Journal of Communication, 25(4):56-65, 1975.

- Dominick, J.R., and Rauch, G.E. "The image of women in network TV commercials. Journal of Broadcasting, 26:259-265, 1972.
- Dorr. See Leifer
- Ennis, P.H., and Bohin, J. Understanding the Employment of Actors (Report No. 3). Washington, D.C.: The National Endowment for the Arts, 1977.
- Federal Communications Commission. The Communications Act of 1934 with Amendments and Indexes Thereto: Recapped to January 1969. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1971.
- Feilitzen, C., and Lenne, O. Identifying with television characters. Journal of Communications, 25(4):51-55, 1975.
- Freud, Sigmund. New Introductory Lectures in Psycho-Analysis. New York: Norton, 1933.
- Frideres, J.S. "Advertising buying patterns and children. Journal of Advertising Research, 13:34-36, 1973.
- Frueh, T., and McGhee, P.E. Traditional sex role development and amount of time spent watching television. Developmental Psychology, 11:109, 1975.
- Gans, H.J. The famine in American mass communications research: Comments on Hirsch, Tuchman, and Gecas. American Journal of Sociology, 77(4): 697-705, 1972.
- Gerbner, G. Violence in television dramas: Trends and symbolic functions. In: Comstock and Rubenstein, eds. Media Content and Control. Vol. I. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Gerbner, G. The dynamics of cultural resistance. In: Tuchman, Daniels, and Benet, eds. Hearth and Home: Images of Women in Mass Media. New York: Oxford University Press, 1978.
- Gerbner, G., and Gross, L. Trends in network television drama and viewer conceptions of social reality, 1967-1973. Violence Profile No. 6, 1974. Mimeo.
- Gerbner, G., and Gross, L. The scary world of TV's heavy viewer. Psychology Today, 1976, pp. 41-45.

- Greenberg, B. The content and context of violence in the mass media. In: Large, Baker, and Ball, eds. Mass Media and Violence. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1969.
- Greenberg, B. Televised violence: Further explorations. In: Comstock, Rubenstein, and Murray, eds. Television's Effects: Further Explorations. Vol. V. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Greenberg, B., and Atkin, C.K. "Parental Mediation of Children's Social Learning From Television." Unpublished proposal submitted to Research and Evaluation Division of Office of Child Development, Washington, D.C., 1975.
- Harris, A. Sex and theories of deviance: Toward a functional theory of deviant type-scripts. American Sociological Review, 42(1):3-15, 1977.
- Head, S.W. Content analysis of television drama programs. Quarterly of Film, Radio, and Television, 9:175-194, 1954.
- Hennessee, J.A., and Nicholson, J. N.O.W. says: TV commercials insult women. New York Times Magazine, May 28, 1972.
- Hilliard, M.E. "The Image of Females as Presented on Children's Morning Network Television." Washington, D.C.: Unpublished manuscript, 1972.
- Isber, C., and Cantor, M.G. Report to the Task Force on Women in Public Television. Washington, D.C.: Corporation for Public Broadcasting, 1975.
- Jennings, R.M., and Walters, A.T. Television Stations' Employment Practices, 1976: The Status of Minorities and Women. New York: United Church of Christ, Office of Communication, January 1977.
- Johnstone, J.W.C.; Slawski, E.J.; and Powman, W.W. The Newspeople. Urbana, Ill.: University of Illinois Press, 1976.
- Journal of Communication, 24(4), 1974.
- Journal of Communication, 27(1), 1977.
- Kohlberg, L.A. A cognitive-development analysis of children's sex-role concepts and attitudes. In: Maccoby, ed. The Development of Sex Differences. Stanford: Stanford University Press, 1966.
- Lazarsfeld, P. Afterword. In: Steiner, ed. The People Look at Television. New York: Alfred A. Knopf, 1963.
- Lee, S.Y.; Winston, S.; and Pedone, R.J. Status Report of Public Broadcasting of 1977. Washington, D.C.: Corporation for Public Broadcasting, 1977.

- Lemon, J. Dominant or dominated? Women on prime-time television.
In: Tuchman, Daniels, and Benet, eds. Hearth and Home.
New York: Oxford University Press, 1978.
- Lesser, G.S. Children and Television: Lessons from Sesame Street.
New York: Random House, 1974.
- Liebert, R.M.; Neale, J.M.; and Davidson, E.S. The Early Window.
New York: Pergamon Press, 1973.
- Lyle, J. The People Look at Public Television, 1974. Washington, D.C.:
Corporation for Public Broadcasting, 1975.
- McIntyre, J., and Teevan, J.J., Jr. Television violence and deviant
behavior. In: Comstock and Rubenstein, eds. Television and
Adolescent Aggressiveness. Vol. III. (Reports and Papers).
Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Melody, W. Children's Television: The Economics of Exploitation.
New Haven: Yale University Press, 1973.
- Michel, W.A. A social learning view of sex differences in behavior.
In: Maccoby, ed. The Development of Sex Differences. Stanford:
Stanford University Press, 1966.
- Milavsky, J.R. "Social Characteristics and Media Effects: A Panel Study
of Televised Violence." Unpublished paper presented at the annual
meeting of the American Sociological Association, Chicago, 1977.
- Mills, C.W. White Collar. New York: Oxford University Press, 1953.
- Muson, H. Teenage violence and the telly. Psychology Today, 1978,
pp. 50-55.
- National Endowment for the Arts. Employment and Unemployment of Artists:
1970-75. Report No. 1. Washington, D.C.: National Endowment for
the Arts, 1976.
- Newsweek, February 21, 1977. pp. 62-66.
- Orwant, J.E., and Cantor, M.G. How sex stereotyping affects perceptions
of news preferences. Journalism Quarterly, 54(11):99-108, 1977.

- A Report of the United States Commission on Civil Rights. Window Dressing on the Set: Women and Minorities in Television. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1977.
- Robertson, T.S., and Rossiter, J.R. Children's responsiveness to commercials. Journal of Communications, 27(1):101-106, 1977.
- Rossiter, J.R., and Robertson, T.S. Children's TV commercials: Testing the defenses. Journal of Communication, 24(4):137-144, 1974.
- Rubenstein, E.A.; Comstock, G.A.; and Murray, J.P. Television in Day to Day Life: Patterns of Use. Vol. IV. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Schuetz, S., and Sprafkin, J.N. Spot messages appearing within Saturday morning television programs. In: Tuchman, Daniels, and Benet, eds. Hearth and Home. New York: Oxford University Press, 1978.
- Seegar, J.F., and Wheeler, P. World of work on TV: Ethnic and sex representation. Journal of Broadcasting, 17:210-214, 1973.
- Sternglanz, S.H., and Serbin, L.A. Sex role stereotyping in children's television programs. Developmental Psychology, 10:710-715, 1974.
- Streicher, H.W. The girls in the cartoons. Journal of Communication, 24(2):125-129, 1974.
- Surgeon General's Scientific Advisory Committee on Television and Social Behavior. Television and Growing Up: The Impact of Televised Violence. Washington, D.C.: Supt. of Docs., U.S. Govt. Print. Off., 1972.
- Tedesco, N.S. Patterns in prime time. Journal of Communication, 24(2): 119-124, 1974.
- Turow, J. Client relationship and children's book publishing. In: Hirsch, Miller, and Kline, eds. Strategies in Communications Research. Beverly Hills: Sage, 1978.
- Werner, A. A case of sex and class socialization. Journal of Communication, 25(4):45-51, 1975.
- Wright, C.R. Mass Communication: A Sociological Perspective. New York: Random House, 1975.

Chapter 8. THE EDUCATIONAL USE OF PRODUCTION VARIABLES AND FORMATIVE RESEARCH IN PROGRAMING.

Keith W. Mielke

No small part of the NIMH concern with television as a teacher stems from the ubiquity of television across America, the huge amounts of time that children and youth devote to watching television, and a growing body of research-based concern about the effects of televised violence and other programing content. What can be done? Institutionalized actions in this arena can be directed to the prevention of harm, to more precise specification and understanding of the problem, and/or to making positive use of the television medium itself. The vehicles for these interrelated actions are (1) imposed regulations, voluntary codes, and public education campaigns; (2) basic or applied research; and (3) production of constructive programing. The emphasis in this chapter is on the last alternative: turning the power of television to constructive ends.

As Schramm (1976) pointed out, the idea of using television in positive ways is not new. He cites testimony given by Paul Lazarsfeld to the U.S. Senate Subcommittee on juvenile delinquency back in 1955:

Let me draw your attention to the fact that everyone talks about bad television programs and the effects which they have; but actually it would be much more constructive and enlightening to experiment with good programs. Why shouldn't it be possible to get reformers and writers together and have them devise programs which everyone thinks would be desirable and beneficial? Would children listen to them? Would they have good effects? And even prior to that, do we really know what we mean by a good program? Are there people around who could write them? It is such a simple idea, but consider what has to be done to carry it out. You have to get psychologists and writers to meet and work together. You have to have funds to provide programs for experimental programs, regardless of whether a station or network is willing to put them on the air. But the aridity and negativism of much of the discussion which takes place today can be overcome only if it is shown that there is something like a good program, that there are people who can be trained to write and produce them, and that children are willing to listen to them.

I think one would have to agree that, in the 23 years following Lazarsfeld's insightful testimony, the positive uses of television have not received the majority of attention, whether indexed by the focus of policy deliberations, by the volume of research, or by programing efforts. Part of the shortfall is no doubt caused by the multiple difficulties in actually harnessing television to constructive ends. In the same sense that it is easier to assess the effects of drought than it is to make rain, the path to constructive uses of television is a difficult one.

With a few notable exceptions, the purposeful use of television to produce intended effects has been pursued more (and more effectively) by advertisers than by educators. Goals are specified; the demographic and psychographic nature of the desired audience is researched; the message is designed with great care; various features of the television medium that can enhance the message are fully employed; the message is pretested and revised for maximum appeal and impact; the diffusion of the message is carefully controlled; reinforcing messages are disseminated through other channels such as stores; multiple barriers to the advocated behavior are analyzed and addressed; packaging is made very attractive; and so on throughout the various elements of a complex system that must operate systemically before the intended effect is achieved. It is not a simple process, nor is it uniformly effective, but it is carefully planned with reference to a wide range of variables. When similarly specific goals are sought in the constructive uses of television for children and youth, a similarly complex process is confronted. Instead of firing the gun and hoping that a clay pigeon might be sailing overhead, a level of system-wide planning is required that differs in type and amount from that typically associated with institutionalized education.

Two elements of this complex process have been singled out as topics for this chapter: production factors and formative research. The discussion of production factors stresses message design which makes full and intentional use of the television medium's attributes. The linkage between message design and formative research is basic. The more innovative the message design in its exploitation of production factors, the greater the need for trial and revision through formative research. The systemic nature of the process of constructive education through mass communication media should be kept firmly in mind as the two elements of that system are discussed.

I am aware that a disproportionate number of examples in this chapter are drawn from the Children's Television Workshop (CTW). There are two reasons for this: (1) CTW programs reflect an above-average interest in the pedagogical use of production factors, as well as a commitment to formative research; and (2) I am most familiar with the CTW examples. The issues, however, are general.

PRODUCTION FACTORS

There are points of view in which the significance of television production factors is played down. Proponents here argue that production factors are virtually impotent in terms of communication effects. The term "fancy production techniques" here would not be a compliment, but a pejorative. The imagery would connote sugar coating and slick packaging, all to no constructive end.

Although not an exact counterpart, there is an opposing view. The tendency here, on the other side of the fence, is not only to attribute great importance to production factors but to be willing to generalize from one unique blend of production elements to other, dissimilar settings. Research efforts in this camp would pursue questions such as:

- What are the generalizable effects of rapid cutting or various camera angles?
- Can the documentary format be useful in information gain and attitude change?
- What proportion of entertainment is necessary to keep an audience interested in an instructional program?

I feel that television production is underplayed in the first instance and overplayed in the second. In a middle zone, production factors can be dealt with constructively. Message designers can call selectively on the vast array of production techniques, when it makes pedagogical sense to do so. Whatever the resultant blend of concept and execution in one task, the message designer will probably need to start dissimilar assignments with a fresh analysis of the new goals, the new target audience, the new content, etc. In this middle zone, production factors are neither to be ignored nor put into a formula for mechanical replications.

Research in instructional television (ITV) during the 1950s and early 1960s did not make a strong case for the significance of production factors, at least as far as measurable learning was concerned. This body of research was reviewed and synthesized by Chu and Schramm (1968). They opened each section of their report with a proposition that seemed to be warranted by the available research evidence and then went on to summarize the research base of support for the proposition. Their research base is not resummarized or critiqued here, but their introductory propositions that pertain to manipulable production factors are extracted and listed to give an idea of how production factors in ITV were perceived a decade ago:

- . There is no evidence to suggest that either visual magnification or large-size screen will improve learning from television in general. (p. 41)
- . There is insufficient evidence to suggest that color will improve learning from film or television. (p. 44)
- . Where learning of perceptual motor skills is required, a subjective angle presentation on television will tend to be more effective than an objective angle presentation. (p. 47)
- . There is no clear evidence on the kind of variations in production techniques that significantly contribute to learning from instructional television. However, students will learn better when the visuals are presented in a continuous order and carefully planned both by the television team and the studio teacher. (p. 48)
- . Attention-gaining cues that are irrelevant to the subject matter will most probably have a negative effect on learning from instructional television. (p. 50)
- . There is no consistent evidence to suggest that either humor or animation significantly contributes to learning from instructional television. (p. 50-a)
- . Subtitles tend to improve learning from instructional television, particularly when the original program is not well organized. (p. 52)
- . There is insufficient evidence to suggest that dramatic presentation will result in more learning than will expository presentation in instructional television. (p. 53)
- . Inserting questions in a television program does not seem to improve learning, but giving the students a rest pause does. (p. 56)
- . The students are likely to acquire the same amount of learning from instructional television whether the materials are presented as a lecture, or in an interview, or in a panel discussion. (p. 67)

Similar sentiments were expressed later by Kincaid and others (1974), although with a recognition that production factors may have something to do with reaching and holding a noncaptive audience:

There is no consistent evidence that making the media more sophisticated enhances effectiveness. For instance, for televised instruction, there is no consistent evidence that color, animation, humor, or dramatic rather than expository presentation improves effectiveness, although it does attract a larger audience--Sesame Street is a prime illustration of this. (p. 8)

One of the conceptual blind spots of instructional television in the 1950s and early 1960s resulted from the tendency to look at television as an extension cord for the eyes and ears, bringing viewers the sights and sounds they could have gotten had they physically been somewhere else. In the thinking of that time, classroom "master teachers" would be made universally available via television. Subject matters that made the transition to television with relative grace would be identified as being especially appropriate for television. Quite aside from the implied insult felt by many teachers (If television is bringing in the "master" teacher, what does that say about my teaching?) was the insensitivity to exploiting what television could do best. In McLuhanistic fashion, the content of early ITV was traditional classroom instruction, reminiscent of early cinematographers planting their cameras in front of the stage to film plays as the content of early movies, giving everyone a front-row-center seat. In neither case was the potential of the medium exploited. Along these lines, Salomon (1977) makes a distinction between a televised lesson and a television lesson: "The former is a lesson transmitted via TV. The latter is a lesson which makes use of whatever uniqueness is offered by the medium" (p. 2). Analyses of production variables are thus message-design tools working in the service of producing television lessons.

My own thoughts about television production factors started to jell in the late 1960s. I wrote the following:

"Fancy production techniques" has almost become an uncomplimentary phrase in ETV, although the poverty of research dealing with TV production strategies stands in striking contrast to the plethora of gross media effectiveness comparisons that leave message treatment variables unanalyzed. The measurement of "effects" in these comparisons typically utilizes paper-pencil tests. The typical baseline of comparison is face-to-face (verbal) instruction. Television will surely have difficulty finding its stride in such a setting...

Suppose we looked at potential ETV messages through the eyes of a combination film maker, educator, and communication theorist. We might see ourselves as a packaging operation, processing visual and aural information, with superb control over what got into the package and how it was treated. We would see ourselves as dealing with many encoding systems, not just verbal systems. We would be encoding a wide variety of information, not just factual information for a traditional information-gain test (Mielke 1968).

This same line of thought was continued later:

At the highest level of message-medium interaction, the raw material would be expanded far beyond the confines of the classroom..., but there would also be extensive and conscious manipulation of the production variables.

Careful consideration would be given to the presentational style, the televisual "statements," the conscious structuring and control of the stimulus to achieve a desired effect. There would be awareness of what might be called the "language" of television, as well as an aesthetic or pedagogical rationale for using one treatment instead of another (Mielke 1970).

I feel that television production variables seemed to register little effect in the early ITV studies because of a lack of pedagogical rationale for using these variables in the first place. Without pedagogical rationale, unmotivated cutting adds confusion, not excitement. It is only commonsense to surmise that animation will be most useful when its specific attributes that can be helpful are used, and so on. Use of pedagogical rationales to gain benefits from production variables is the domain of message design, when the message is designed for television from the beginning. Lazarus (1977) offers this view:

There are...problems in reconciling content and production. The two overlap the most in questions of pedagogy--not which content to teach, and not the technical details of production, but matters like the sequence and pace of presentation, the best level of detail in scripts and close-ups, appropriate degrees of realism, and so on.

The point of view that production variables are insignificant rests on the deficiency of not exploring pedagogical rationales for harnessing those production factors that can improve effectiveness. On the other hand, the attempt to explain everything in terms of production "formulas" rests on yet another deficiency: not grasping the inherent interaction between content and production. It is possible to envision a continuum

that runs from a pole of "high content/low production effects" to the opposite pole of "low content/high production effects." Consideration of the polar positions may shed light on the middle ground of content/treatment interaction, where virtually all television programming for the in-home audience takes place.

When television is used merely as an extension cord for the eyes, as in a monitoring situation, very little imposition of a production nature takes place. The flight schedule in the airport, seen live, is rather similar to the televised version of that same flight schedule, seen down the hall. Such effects as can be expected from that message can be attributed to content and not presentational style.

Leaping across to the other end of the continuum, one can encounter television programming with no content. Examples include experimental excursions into "television art," where kaleidoscopic-like images can be generated and manipulated electronically by individuals (or even by ensembles working in concert in real time visual approximation to a jazz ensemble).

Neither extreme characterizes the television programming that children spend so much time viewing. Here, in the middle ground, the interaction between content and presentation style is typical. Effects of televised content depend in part on how it is produced. Effects of production variables depend in part on the content being presented.

Just as it was counterproductive to ignore production variables, it is counterproductive, I feel, to establish prescriptive production formulas that go very much beyond general guidelines. The formula approach is deficient because it is simplistic and mechanical; it lacks a rationale or a theory. For example, to say that animation is appealing or easily comprehended is to stop short of considering why this might be so, and what the relevant attributes of animation are, if any, that could enhance appeal and comprehension. Without such reasoning it is of course possible to produce animation that would not get the anticipated results or to overlook the same conceptual benefits in other formats. Rationales that get into the analysis of animation, such as noting that the ratio of relevant to irrelevant visual cues is usually very high, suggest the conditions under which animation will and will not work efficiently in learning. The typical paucity of irrelevant cues in animation is traceable to economics, where the incentive is to communicate the most intentional meaning with the least possible complexity of drawings. If some figure or animal is irrelevant to a scene, the economic motive is to not put it in. It would add to the cost without adding to the payoff, so it tends to be avoided. This results in a typical style that may have important implications for nonanimated programming as well, but it takes an analytical message-design approach to be able to extract the implication.

To make a production "recipe," one has to be able to describe the ingredients. One of the reasons it would be so difficult to predict effects of production variables from a formula is that very subtle differences in a production element can make a lot of difference in the reaction to the program. Artistry lies in manipulating those subtle differences. In taping sessions for television, for example, it is not uncommon to record several "takes" until the director determines that one particular take has a satisfactory blend of attributes. If one would overlay a set of descriptive or analytic production categories on the various takes, it is doubtful that they would be distinguishable. I can't conceive of a set of production descriptors that would be precise and specific enough to minimize subjective judgments, yet of sufficient generality to be useful in describing more than one idiosyncratic stimulus, that would differentiate among most takes in any given group of takes. The basis of discrimination inside the head of the director will elude a content-analysis approach to categorization.

To generalize from one production to another via formula, one must know which, from among the multitude of idiosyncratic attributes in a program, are the critical attributes. No matter how exhaustive the list of descriptive attributes, there can be other attributes not taken into account, and these can cause the generalization to fail. Stanford (in Witherspoon 1974) describes such a failure to replicate, telling of a researcher who "found that animation and puppets did not appear to be as effective as indicated in the Sesame Street research, but /who/ noted that this may have been due to the fact that Sesame Street used professional puppeteers and animators." It is of little help to state a generalization that puppets, generically, either are or are not effective, and it provides little analytic insight to advocate the use of professional puppeteers.

The search for a production formula, therefore, may involve more problems than meet the eye. Opposite the "good" that could come from exporting and replicating success stories, or avoiding the replication of failures, stands the potential for "harm" that could come from the uncritical imitation of the easily perceived attributes of successful programming or the harm that could come from concluding that it is impossible for some blend of production factors to work, therefore cutting off exploration. Producers, told that the formula says something is impossible, have a way of producing the exception to the rule. The same holds for content. For instance, it would be difficult to imagine a less promising subject matter for a voluntary children's television audience than reading. If dictated by a formula for feasible content, the conclusion would surely be to stay away from it entirely. Yet, The Electric Company series transformed the seemingly unpromising content into excellent programming. Critical to this transformation was a message-design procedure that exploited the various potentialities of production with pedagogical rationales.

I feel that most production manipulations are product specific. That is, the effect of one production variable will be influenced by the entire context in which the one variable takes place. Given that different situations by definition have different contexts, the effect of the same production manipulation may well have a different effect or no apparent effect at all. For example, an interesting study, unpublished, was done with a laugh track in the course of the formative research for Feeling Good, a CTW experimental series in health education. A sample reel of nine test segments was produced originally without a laugh track, although most of the segments were humorous by intent. Later, a professional laugh track was added, giving an opportunity to test the effects of the laugh track under conditions of control unusual for formative research. After matching test respondents to the two versions on such factors as ethnicity, sex, age, and education, we compared measures of program appeal, cast appeal, and comprehension. For most of the nine segments, the laugh track increased the appeal of the program and cast. Surprisingly, however, the laugh track version was comprehended at a lower level than was the original version. A simple and general conclusion would be tempting: laugh tracks increase appeal but decrease comprehension.

I would be most reluctant, however, to generalize beyond that particular set of segments. Even there, no effect held constant across all nine segments. An enormously complex interaction was taking place, insight into which demanded detailed familiarity with those particular segments. Even the term "laugh track" does not refer to any constant quality, but varies from execution to execution. In terms of message design work for those segments, however, the information did help to understand the various reactions to the two versions.

To the extent that some of the enormous variations that occur in children's television programing can be pulled into a tighter circle in which production and audience elements can still vary, but within very restricted categories, it may be possible to venture forth toward some principles of message design that will have predictive validity. Bernstein (1978) has completed a study that goes right to the cutting edge of this kind of effort, being careful to avoid the error of overgeneralization: "The design of children's television programming, both before and after the study, is and will remain very much more art than science. No mysterious attribute formula for the design of appealing programs was sought which would substitute research rules for creativity and artistry. Nor was one found" (p. 4). Using 33 Sesame Street segments as stimulus materials (thus restricting the quantity and variance of a large number of known and unknown production factors) and preschool test audiences in the lower socioeconomic range (thus restricting the variance in audience and audience/program interaction factors), Bernstein explored the relationships between (a) a highly selective list of programing attributes (thus restricting the production dimensions to be considered in the first place) and (b) various

measures of visual attention (thus greatly restricting the range of effects under examination).

Even under those tight constraints some ambiguities emerged, such as a strong method variance in the measures of attention, and in findings that differed from those of previous research findings (e.g., in effects of programing context). This is not to suggest that this study has more constraints than in the "typical" study of production factors (if there be such a thing); if anything, this study has fewer constraints than typical. The difference is that, in this study, the constraints were recognized and made explicit from the beginning. The nature of Bernstein's findings, within the constraints described above, is suggested in the following quotation:

The segment attribute predicator which best explained variance in preschool visual attention was the kind of storyline used. Affective storylines, which were characterized by dense, active audio tracks and relatively static visual tracks, were related to low viewer attention. Lesson or demonstration storylines, which were characterized by sparse, inactive audio tracks and visual action highly functional to the understanding of segment messages, were related to high viewer attention. Storylines wherein songs were central were negatively related to viewer attention.

Additional segment design attributes of Sesame Street's audio track also explained variance in preschool children's visual attention. The use of puns, a highly sophisticated verbal form of humor, was related to low viewer attention, as measured by the slide distractor method. The segment design attribute, adult and muppet principal speakers, which was characterized by much verbal humor, affective storylines, and little visual movement, was related to low viewer attention. Segments with principal speakers who were on screen throughout were negatively related to high viewer attention. Segments characterized by verbal rhythm and rhyme were related to high visual attention (p. 94).

What kinds of things are known (or can be known) about production and format variables? Do they "behave" with the regularity and predictability that will allow understanding of their effects? If understood, can the effects be controlled? Can we generalize propositions about effects of production variables to the level of policy? What types or forms of production should be encouraged, or financed, or regulated? Such questions have been asked by researchers and government personnel for some time, at least since we became sensitized to the influence television was having on children. It is clear that not very much can be chiseled in granite at this point. If there is a production formula that will reliably deliver certain audience effects, it seems to be a well-kept secret.

Once the commitment is made to search for pedagogical rationales to employ all useful production variables, and once the difficulties of trying to establish generalizable production formulas are recognized, it is possible to do a great deal of constructive work in message design for goal-directed television programming. For example, imaginative production work, incorporating analyses of production factors into message design, has been done over the years by the Children's Television Workshop in its Sesame Street series. Lesser discusses this in his chapter "Assumptions Behind the Production and Writing Methods in Sesame Street" (1972). Selected examples from Lesser's chapter follow:

- . To suggest to children that they can mentally simulate various scenarios before taking action, a character's thoughts (thinking through alternatives) would be acted out above his head prior to taking any action.
- . Television's ability to focus attention to certain cues and away from others can be used to help young children differentiate relevant and irrelevant information.
- . Cross-modal reinforcement (video with audio) can be carefully structured in television production.
- . Imitation behavior can be enhanced by producing clear and interesting models of target behavior that audience members can actually imitate on their own.
- . A variety of production devices can be instrumental in directing attention, such as use of surprise, incongruity, animation, pixilation.
- . Production devices that incorporate a wide variety of visual and verbal humor can be used to sustain voluntary attention. Attention is also facilitated by diversity in characters, content, style, and pace.

These insights are not sure-fire formulas; they are guidelines that relate various options in the production process to educational goals for the Sesame Street series.

The previous examples of production factors have mostly had their real potential application in the design of goal-directed television materials. The analysis of production factors also has importance in such areas as regulatory policy and theoretical research, as illustrated in the following two paragraphs.

Policy use of production analyses is illustrated by the work of Adler et al. (1977) who have recently completed for the National Science Foundation a summary of research that pertains to television advertising directed to children. The following examples show how production factors relate to such a policy context:

One important issue is the extent to which children can differentiate between program content and commercials. The three commercial networks employ different production devices with the intent of achieving this separation in the minds of the viewing children, but the effectiveness of these devices is unknown.

The manifest accuracy of product attributes suggested by various production devices is an issue, as is the accuracy of product attributes perceived by children.

Disclaimers and caveats may be missed or miscomprehended, and such (mis) perception and (mis) comprehension can be affected by production factors, as can issues of host selling, commercials for foods and drugs, portrayals of violence and unsafe acts, use of premiums in commercials, and repetition of commercials.

There is also theoretical research dimension to analysis of production factors, typified by the work of Salomon, who poses such intriguing questions as this: "If language, a communicational symbol system, can be internalized to become a 'tool of thought,' and if media, other than language, have their own symbol systems, could they not be internalized as well? Moreover, could they not come to serve mediational (i.e., covert representational) functions similar to those accomplished by internalized language?" (1977, p. 4). Thus it may be, according to this line of thought, that television's zoom-in feature could stimulate internal mental processes of relating a part to the whole. Work continues in this area, but one need not wait until the theoretical issues are resolved to use the analysis of production factors in message design. The innovative use of production factors in message design is made much more manageable with the use of formative research, which is discussed next.

FORMATIVE RESEARCH

In children's television programing, formative research¹ is, in general, designed to provide diagnostic feedback into the decision-making process for production, so that programing improvements, if needed, can be made before broadcast. The typical contrast is with summative research, which assesses the extent to which goals were achieved by the program or series as a whole, among the intended target audience (Palmer 1974). The former is analogous to mid-course tutoring; the latter is analogous to a final report card.

The type and amount of formative research needed are related to the type and amount of accountability for the programing. Commercial entertainment programing is not held accountable for learning effects. On the other hand, most in-school ITV programing is not held accountable for attracting a voluntary audience. The curriculum-based or goal-directed programing that competes for the attention of the in-home viewer, however, faces dual accountability; it is required to deliver voluntary audiences and to have educational effects. Formative research can be useful in all categories. Particularly in the most difficult combination, the role of formative research can be critical. The blending of entertainment with carefully planned educational content tends to push production people into uncharted waters, where any reasonable navigational aids that formative research can provide will fall on receptive ears.

Some approaches to formative research are based directly on the terminal goals for the project. For example, if an educational film was supposed to teach one how to use a new machine, a formative research team could show it to a test audience, who would then be tested directly on their ability to use the machine. The simplicity of this approach is appealing: If a program is supposed to do X, let formative research see if it does indeed do X.

I have come to prefer the term "formative research" to "formative evaluation" in the sense that "evaluation" is sometimes too restrictive. "Evaluation" means judging the worthwhileness of something, i.e., placing value upon it. This does characterize much of the activity of formative researchers, as when they "evaluate" test segments of programing. Formative researchers do more, however, at least at CTW. They help develop the curriculum, and they do background research on the target audience, for example, and these activities are not entirely evaluative. My interest, however, is in the activities, not what they are called.

There are real limitations, however, in actually applying this "test the terminal goal" approach to formative research in television, particularly television designed for the voluntary, in-home audience. To distinguish them from the terminal goals, let us refer to prerequisite steps to the terminal goals as instrumental goals. The instrumental goals must be reached before the terminal goals can be reached. Among the first and certainly among the most difficult of the instrumental goals in television designed for the home audience is attracting the voluntary audience in the first place. (The saying goes that "You have to get them into the church before the preaching does any good.") Since programers cannot control the competitive attractions for the in-home audience, whether the competition is other television programing or something else entirely, the line of formative research suggested by the instrumental goal of attracting the audience is usually addressed to measures of appeal of the test programing.

Measures of appeal can take many different operational forms. The distractor method has been used with success at CTW among children too young for responding to questionnaires or manipulation of research apparatuses. Test program material is shown along with some distraction, such as frequently changing slides, or other distractions, such as toys to play with. An observer notes when and for how long the child pays attention to the test program versus the distraction. The instrumental goal issue is not only to attract the attention of the target audience but also to hold it, since in the home setting there is no external compulsion to stay with the program. The distractor method also indexes that. When it can be shown that some parts of the test program attract and sustain attention, while other parts do not, that becomes useful diagnostic information for program revision. None of this essential information on instrumental goals would come from going directly to measurement of terminal goals.

Among older children, say, in the 8-to 12-year range, we have successfully used a modified version of the Stanton-Lazarsfeld program analyzer. This is a research apparatus that allows test audience members to register votes (evaluative reactions about program appeal) on a continuous basis, while the test program is being watched. A moving paper scroll on which votes are permanently recorded allows the research staff later to match exact program content to the responses, which provide diagnostic feedback to production.

Another method is to photograph or make a video tape of children watching a test show, then analyzing manifest visual attention to the television screen. Among older children, postviewing questionnaires can also be employed for measures of appeal, for the program as a whole, for specific segments with the program, and for various cast members. Yet another method is to play excerpts from a variety of programing (which includes the test program) and then take a vote on which program the children would like to see in its entirety. When the question is what part of the screen is the focus of attention, as was the case for The Electric Company when print would be on the screen, more elaborate research apparatus is needed, such as eye-movement cameras.

A variety of softer methods is also employed to test appeal. Foremost among these is simply talking with test audiences about what they liked or didn't like and why.

Formative measures of credibility fall somewhere between appeal and comprehension. When message designers are exploiting what television can do uniquely well, they get away from such formats as lectures and into such more-difficult-to-evaluate areas as role modeling, extension and compression of sensory data, setting up vicarious experiences that could never be experienced first hand, and so on. Consider only role modeling. It cannot be simply assumed that an intended role model will actually function as such. The attractiveness and credibility of the intended model need to be ascertained through formative research. When something doesn't "ring true," such as an amateurish performance or production, or anything suspected of being "phony," children are quick and unforgiving in their evaluative reactions.

Another important instrumental goal is comprehension. This refers to such obvious factors as vocabulary level but, in television, comprehension covers much more than that. If an informational point is being developed, say, in three linear, cumulative segments, and if the final segment is not comprehended, the question is raised as to whether the test audiences understood the lead-in steps or whether the problem lies solely in the final segment. Therefore, assessing the cognitive prerequisites to later understanding within the development of a message is important. Formative research is also used to see if the audience has the necessary background to comprehend the material in the first place. Also, to the extent that a full range of production techniques is employed with pedagogical rationale to convey the intended message, the issue of comprehension extends to comprehension of the production techniques themselves. Whether conscious of it or not, adults are familiar with many production conventions. If we see a person boarding a plane and then see a cut to the plane in the air, we naturally assume that the person we saw boarding a moment ago is now aboard the plane in the air. This may or may not be the case with young children; it needs to be ascertained with formative research.

There are several methods for testing comprehension. Since it is very difficult to recall after the fact what was being thought about at various times during a test program, there are certain advantages to obtaining comprehension measures as the program is being presented. One way to do this is to stop the tape at critical junctures and ask the child to explain what is going on at that point in the program. A variation on this is to first view the program in its entirety, then replay the program with the sound turned off, asking the child to provide play-by-play narration. Again, with older children, postviewing interviews and questionnaires can be employed.

Therefore, one major reason for not testing terminal goals directly in formative research is that the instrumental goals of attention (appeal) and comprehension cannot be merely assumed. Another reason is that it is frequently unrealistic to expect terminal-goal behavior as the result of a single exposure. Also, it is frequently valuable to test parts of programs before the entire program is assembled. Unlike draft versions of books which can be revised easily, revision of completed television programs is usually prohibitively expensive. The bulk of formative research in children's television, therefore, is devoted to measures of appeal and comprehension.

There is no uniform set of criteria by which to evaluate research that is called formative because the label in practice has been used to refer to different functions. Research called formative that is used in-house is different in important ways from research called formative that is used out-of-house. (The previous discussion of formative research has been of the in-house variety.)

When used for the purpose of informing the ongoing, in-house decision needs of the production staff, the formative research itself takes on a definite in-house character. In this context, it is most natural for the research staff to be in-house personnel. It requires an insider's access to the real production problems, the real production decisions, and the real set of feasible options in order to produce research that is useful in actual, in-house decisionmaking.

In the in-house setting, formative researchers are not disinterested third parties who pass judgment on processes and products; they are rightfully expected to be as committed to the success of the project as are other members of the team. Their in-house role as formative researchers is not only to spot problems but to go on to suggest improvements and solutions.

For a variety of reasons, such formative research tends to stay in-house rather than go into public dissemination.

- Formative research reports are not usually published in scholarly journals.

Being working documents, timed by a complex flow of internal decision-making, they tend to vary in completeness and frequently lack the context and background necessary for an outside reader. Being oriented to spotting problems, generating insights, and suggesting solutions, they often fail to meet criteria for design and rigor associated with conclusion-oriented research which is done to test hypotheses and build theory. Conclusion-oriented

research seeks to establish generalizable propositions; decision-oriented research tends to be product-specific (i.e., descriptive of one particular stimulus and/or its effects).

- Product-specific formative data tend to be of interest and value only to the in-house staff. Such data as scene-by-scene attention profiles obviously have greatest relevance to those primarily involved in the design and production of those particular scenes. Even other formative researchers tend not to be interested in their colleagues' product-specific data; what they're more interested in are the formative research techniques and procedures, because these have more general applicability.

The major criterion by which in-house formative research is to be judged, therefore, is its actual utility in reaching informed decisions in the design and production of the television materials. This utility is indeed affected by methodological factors; issues of internal and external validity are relevant to all data-based research. Perhaps even more important to actual utility, however, are such factors as addressing research questions that feed real production decisions, feeding data and interpretation back in time to actually affect the decision, putting results in a nonjargonized form that is easily comprehended by nonresearchers, and skill in going beyond the data to extract message design implications in discussion with the production staff. The utility of formative research is thus heavily dependent on good interpersonal relationships between researchers and producers. This cooperative linkage is not necessarily a natural one or one that can be legislated into existence; it must be nurtured carefully both by research and production people.

External (out-of-house) decisionmakers have information needs related to the project, but they tend to be for summative-type decisions, such as continuation of funding or distribution and utilization decisions. The external sources, presumably, are not involved directly in ongoing production decisions, which are the primary target for in-house formative research. Therefore, when access to formative research is required by external sources, such as funders, and the research is used to make a summative-type decision, the research, by way of its functional use, is then summative research, regardless of what it is called. That is to say, the ultimate designation of a datum as formative or summative depends in large part on how it is used. A datum used internally to modify and improve the production of materials is formative; a datum used externally to reach decisions based on demonstrated or predicted degree of success in achieving goals is summative. Summative data can be used formatively, as when an ongoing series incorporates into its revision plans the summative outcomes from a previous season. This causes no special problems. The reverse however, using (internal) formative data for (external) summative-type decisions, can be problematic.

The pressure on formative researchers to provide both formative and summative input places researchers in a difficult situation, raising the probabilities that the research will serve neither function well. Crane and others (1977) have recently studied this issue. These researchers conducted confidential staff interviews at eight projects, all of which produced regional or national television programs for children. In each of the eight projects, one evaluator, one producer, and one administrator were interviewed to obtain three distinct perspectives on the impact of evaluation on the production of the children's programing. Pertaining to this issue, the authors concluded:

Perhaps the most difficult problem encountered by evaluators arose in situations where both formative and summative evaluation activities were demanded of the evaluator. It is difficult to cultivate a relationship of cooperation and trust necessary for formative evaluation when the summative evaluation report can potentially destroy production (p. 27).

In a policy research study for the U.S. Office of Education, Mielke et al. (1975) also addressed this issue of confusing or mixing the formative and summative research functions:

Evaluation is important in program development and production, where pretesting can provide corrective feedback to the production staff before the product is finalized. This function of formative evaluation is most appropriately conducted by in-house evaluation staff communicating directly with in-house producers. Summative evaluation compares goals with achievement and is used by out-of-house decision makers for decisions such as refunding, distribution, and adoption. Dysfunctional pressures are brought to bear on the formative evaluation process when in-house formative data are utilized by out-of-house decision makers for summative-type decisions, such as in the review of pilot-testing data for go/no go decisions on an entire series. We recommend that summative evaluation procedures be utilized for summative types of decisions. The summative procedures we recommend include employment of external evaluation agencies that work in cooperation with the production agency, subject to third-party review (p. xi).

In my opinion, the formative research role is too important in goal-directed children's programing to be pulled off course, away from its major objective of helping producers make better programs. If half-heartedly pursued merely to satisfy a funding requirement, formative

research can easily become ritualized and meaningless. If forced into functions for which it was not intended, such as summative research or even public relations, the contamination of its original function is a likely outcome. In considering various forms of decision-oriented research for inschool television programing a few years ago, I recommended:

The top priority for research resources should go to formative research. There should always be a summative research component of some dimensions, but without an active formative research component, isolated summative research may be little more than an autopsy (Mielke 1974).

The case for a high priority on formative research, that truly functions as formative research, is equally valid for all goal-directed children's programing.

When clearly locked into teamwork with production, formative research objectives and procedures evolve as the project itself evolves. Long before actual production has started, formative researchers can be contributing to the curriculum and developing goals, possible measures for those goals, and even general kinds of production treatments that have high promise of addressing those goals programmatically. Background research on the target audience can be usefully incorporated at these early stages of a project, for example:

- What is a typical information level on the program topic among the target audience?
- What facilitative or hindering attitudes toward the proposed content are likely to be encountered?
- What research techniques and procedures are appropriate for this target audience and this topic?
- According to the literature and expert advisors, what are the predominant needs in the proposed content area? (Which of these needs are more and less amenable to television treatment?)

Existing materials on related topics, produced by others, can be evaluated among the target audience to find programing attributes that are appealing and comprehensible. Then, in early stages of production, scripts and storyboards can be evaluated, feeding forward into actual production. Segments of unfinished programs can be evaluated, feeding forward into final editing.

Pilot or test shows can be evaluated with greater care and rigor, feeding forward into final series decisions. Early series programs can be evaluated, feeding forward into production or editing decisions for later programs in the series. It can be seen that formative research is not a static enterprise but one that conforms to the changing needs for input into important managerial decisions.

IN CONCLUSION

It is difficult to estimate at this juncture how applicable this discussion of production variables and formative research will be in the overall context of mental health issues of policy concern to NIMH. Clearly, the emphasis of this chapter has been less on mediation and control of potential harmful effects of television programing for children than on the constructive use of television for desired ends. Whether NIMH should consider sponsorship of original programing to meet its goals in the mental health area or should participate in other programs as advocates for a mental health viewpoint calls for an analysis that is clearly beyond the scope of this paper.

It is worthy of note that several goal-directed series for children do include goals of clear relevance to mental health. Such series for example, as: Inside/Out, Self-Incorporated, Zoom, Sesame Street, and Mister Rogers' Neighborhood all have relevant programing. Several series funded under the Emergency School Aid Act have special consideration for needs of minorities (including mental health needs). Such series include Carrascolendas, Villa Alegre, Vegetable Soup, plus several others. Several new series to come out soon should be of interest to NIMH, including Freestyle (career awareness), Feeling Free (concerns of handicapped), and Footsteps (parental education).

There are several precedents, therefore, for attempting to produce constructive children's programing in goal areas related to mental health. Summative measures of impact in mental health goal areas, however, are more sparse, in part due to the great difficulty of measuring them. How, for example, does one get a rigorous measure among a mass audience for enhancement of self-concept? It is particularly in those areas where summative measures are especially difficult that formative measures of appeal, comprehension, credibility, and identification are critical. If one cannot go on to establish the presence or absence of a "terminal goal effect," at least one can, with formative research, establish that the necessary prerequisite conditions were met, that the conditions for increasing the probability of the desired effect were present.

It is difficult to extract actual production guidance or message-design principles from much of the basic research on the effects of television, but it might be a worthwhile effort to review that literature from the viewpoint of message-design implications. Some work in progress at the Indiana University Institute for Communication Research, for example, holds promise in this regard. The research, funded by the National Science Foundation and being conducted by Dr. Dolf Zillmann and colleagues, deals experimentally with various effects of humor in educational television programing.

Drawing guidance from all possible sources, the conscious, pedagogical use of the full range of production variables, harnessed to constructive ends and ascertained with formative research, would clearly raise the probabilities for significant impact of television programing in the mental health area.

REFERENCES

- Adler, R. et al. Research on the Effects of Television Advertising on Children. Washington, D.C.: National Science Foundation, 1977.
- Bernstein, L.J. "Design Attributes of Sesame Street and the Visual Attention of Preschool Children." Unpublished doctoral dissertation, Columbia University, 1978.
- Chu, G.C., and Schramm, W. Learning From Television: What the Research Says. Washington, D.C.: National Association of Educational Broadcasters, 1968.
- Crane, V.; Quiroga, B.; and Linowes, J. "The Impact of Evaluation on the Production of Children's Television Programs." Paper presented at the annual convention of the National Association of Educational Broadcasters, Washington, D.C., November 15, 1977.
- Kincaid, H.V.; McEachron, N.B.; and McKinney, D. Technology in Public Elementary and Secondary Education: A Policy Analysis Perspective. Menlo Park, Calif.: Stanford Research Institute, April 1974.
- Lazarus, M. Education and television: Making the marriage work. The National Elementary Principal, 56(3):32, 1977.
- Lesser, G.S. Assumptions behind the production and writing methods in Sesame Street. In: Schramm, W., ed. Quality in Instructional Television. Honolulu: The University Press of Hawaii, 1972.
- Mielke, K.W. Asking the right ETV research questions. Educational Broadcasting Review, (2)6, December 1968.
- Mielke, K.W. Media-message interactions in TV. In: Salomon, G., and Snow, R.E., eds. Commentaries on Research in Instructional Media Viewpoints, 46:15-32, 1970.
- Mielke, K.W. Decision-oriented research in school television. Public Telecommunications Review, 2(3)31-39, 1974.
- Mielke, K.W.; Johnson, R.C.; and Cole, B.G. The Federal Role in Funding Children's Television Programming, Volumes I and II, Bloomington: Institute for Communication Research, Department of Telecommunications, Indiana University, 1975.
- Palmer, E.L. Formative research in the production of television for children. In: Olson, D.E., ed. Media and Symbols: The Forms of Expression, Communication and Education. Chicago: University of Chicago Press, 1974.

Salomon, G. The Language of Media and the Cultivation of Mental Skills.
Jerusalem: The Hebrew University, 1977.

Schramm, W. The second harvest of two research-producing events: The Surgeon General's inquiry and Sesame Street. Proceedings of the National Academy of Education, 3:151-219, 1976.

Stanford, M.C. A review of recent research on instructional television and radio. In: Witherspoon, J.P., ed. State of the Art: A Study of Current Practices and Trends in Educational Uses of Public Radio and Television. Washington: Advisory Council of National Organizations and the Corporation for Public Broadcasting, 1974.

Author's note: Since this paper was submitted, much of the research and television production cited as "in progress" has been completed. The principles involved, however, remain unchanged.

Chapter 9. THE IMPACT OF EDUCATIONAL TELEVISION UPON YOUNG CHILDREN AROUND THE WORLD.

Wayne H. Holtzman, Ph.D.

In the past 10 years, television has grown considerably in its capability to reach millions of children with educational programming that is also entertaining and of high quality. Very young children of preschool age have been an audience of special concern since the late 1960s when Children's Television Workshop of New York launched its famous Sesame Street programs. The term, "educational television," is used here to represent mass public broadcasting with an educational purpose, a form of television distinctly different from commercially sponsored entertainment or closed-circuit transmission for instruction in the classroom.

The rapid expansion of educational television for young children has spread throughout the world. While descriptions of such television programs in other countries are fairly common, scientific evaluations are rare and more recent in nature. Models for evaluation range from simple studies of audience awareness or acceptance of a new program to extensive psychological field studies concerning the long-lasting impact of educational television upon development of the individual child. Only a few of these recent studies can be summarized here. Most of them deal with cognitive learning rather than with social or emotional behavior.

Findings from Sesame Street evaluations are presented first, followed by selected studies in several other countries dealing with similar programs for young children. Project SITE in India is then summarized to illustrate a totally different application of educational television in which programs are beamed to illiterate families in rural villages. Following this brief review, some general observations and recommendations are presented.

SESAME STREET AND THE NEW ERA OF CHILDREN'S TELEVISION

The public acceptance of Sesame Street for preschool education by television in 1970 marked the beginning of a new era in educational television. For the first time, the proven techniques of commercial television, the entertainment field, and professionals in education and the behavioral sciences were combined to produce an educational series designed to stimulate the cognitive development of young children. Initial evaluations of Sesame Street by Ball and Bogatz (1970; Bogatz and Ball 1971) demonstrated significant gains for children viewing the program, although the meaning of these gains, particularly for disadvantaged children, has been questioned by subsequent viewers (Cook et al, 1975).

Within only 6 years, Sesame Street has been translated, adapted, and imitated throughout the world. The original English-language version has been broadcast in over 40 countries, and eight foreign-language adaptations have been presented in 19 countries (Palmer, Chen, and Lesser 1976). The productions in foreign languages usually follow one of two different patterns: (1) the co-production format in which half the material (usually expensive graphics) is taken from the U.S. original while the remainder is produced locally; and (2) the "Open Sesame" format consisting of segments from the U.S. original with language dubbing and with a locally produced film opening. The "Open Sesame" format is more common since the co-production format calls for new script, characters, actors, production, and formative evaluation similar to the original.

Sesame Street and its foreign adaptations have the primary objective of preparing young children for school learning. The specific goals concern four areas of school readiness: (1) symbolic processes, such as recognition and use of letters, numbers, and geometric forms; (2) cognitive organization, including sorting, classification, and perceptual discrimination; (3) reasoning and problem solving; and (4) elementary understanding of the social and physical world. Less explicit are the goals of socialization, increased self-esteem, and interpersonal competence. The detailed statements of goals guided the production of program segments and provided targets for specially constructed achievement tests used in the national evaluation studies out by the Educational Testing Service of Princeton, New Jersey.

The original, English-language version of Sesame Street proved to be unexpectedly popular in several foreign countries where older children and adults valued the series as a way of improving their ability to speak and understand English. Sesame Street is still broadcast for this purpose in Israel (Salomon 1976) and Japan (Yamamoto 1976). In most instances, however, the local language (if not dialect) was used.

The primary intended audience for Sesame Street was urban, low-income, preschool children viewing television in their homes or in daycare centers. As might be expected, middle-class and upper class parents quickly seized the opportunity to educate their own children, rapidly expanding the audience to many millions of children beyond the initial target group. Using data in a number of nationwide audience surveys, Cook et al. (1975) estimated that about one-third of all the Nation's children between 2 and 5 years of age were regular viewers (four or more times a week) during the first two seasons of Sesame Street broadcast. When one takes into account the fact that only 63 percent of the households in the Nation could receive public television, these impressive figures indicate that the majority of preschoolers in the United States with access to public television were regular viewers of Sesame Street.

In most other countries the program has also been well received. For example, a 1971 survey by the Australian Broadcasting Corporation revealed that 84 percent of all children aged 3 to 6 in the broadcasting catchment area viewed Sesame Street frequently (Palmer et al, 1976). Within a year of its introduction to Mexico City, Plaza Sesamo had been viewed by over 90 percent of preschool children, regardless of social class (Diaz-Guerrero et al. 1976). The overwhelming majority of parents think their children learn from watching Sesame Street.

Several major evaluations and a score of minor ones have been undertaken to assess objectively the impact of Sesame Street upon young children. The two most extensive evaluations are the national studies of the original Sesame Street undertaken by Bell and Bogatz at Educational Testing Service and the evaluations of Plaza Sesamo, a Spanish version produced in Mexico and evaluated by Diaz-Guerrero and his associates at the National Institute of Behavioral Sciences and Public Opinion (INCCAPAC) in Mexico City. Because these two major studies and their secondary analysis by Cook and his associates constitute the most thorough ever done on the impact of educational television upon preschool children, they are worth examining in some detail. Only selected highlights can be presented here.

The national evaluations of Sesame Street were carried out during the first two seasons of broadcast. Since the series consists of daily presentations for 6 months--a total of 130 programs each 1 hour in length--efforts were made by the evaluators to encourage regular viewing by experimental children, using a variety of incentives. The control groups were not so encouraged, and few of them happened to see the public broadcast.

In the first year's evaluation, the preschoolers were also divided into those who watched Sesame Street at home and those who watched it in a kindergarten or daycare center. Five research sites across the Nation were chosen, yielding large numbers of both black and white children, including a small number of Mexican Americans in Arizona. Most were from economically disadvantaged families, although a sufficient number of

middle-class whites were included to permit studies of socioeconomic status as well as ethnic background. Complete pretest and posttest data on the specially devised test battery were obtained for a total of 943 preschoolers who were 3-, 4-, or 5-years-old at the start of the experiment. Logs of time spent viewing were also kept, and many children were actually observed periodically.

When considered as a whole at the end of the 6 months, the experimental children learned more, on the average, than did the control groups. Encouraged children learned more than did the children who were not systematically encouraged to watch Sesame Street. And heavy viewers showed larger gain scores on the tests than light viewers. These initial results, though promising, left considerable doubt concerning the magnitude of the impact on specific kinds of children under different viewing conditions. A partial confounding of site, socioeconomic status, ethnicity, and uncontrolled viewing behavior made a detailed interpretation difficult.

The second year's evaluation was limited to two cities, Winston-Salem and Los Angeles, where Sesame Street was available only on a restricted cable or UHF channel, making experimental control much easier. Poor neighborhoods were chosen where viewing could be more rigorously controlled by providing children in the experimental groups with cable or UHF adaptors and withholding them from the control groups. Periodic encouragement of the experimental children was given with a number of incentives, leading to more regular viewers. The eight learning tests given before and after Sesame Street were also improved, resulting in a more carefully controlled study of 283 children, largely disadvantaged blacks, in the second year. A separate study of 66 Spanish-speaking children in Los Angeles was also undertaken but was largely inconclusive because of initial pretest differences in the experimental and control groups and the small number of cases.

Most of the second-year results replicated those of the first year, leading the evaluators to conclude that regular viewing of Sesame Street by 3-, 4-, and 5-year-olds produced significant cognitive gains beyond those that would have been reached by normal maturation without Sesame Street. These positive findings were widely acclaimed in support of Sesame Street and its foreign adaptations throughout the world.

Among the incidental findings from home observations and parental interviews in the Sesame Street evaluations, it was discovered that encouragement to view the programs regularly did not cause any change in general television viewing, nor did it affect parental aspirations for the child or the amount of intellectual stimulation in the home. However, the mothers of children who were encouraged to view Sesame Street did report that they were reading less to their children. Encouragement to view and the actual amount of viewing are two different factors. They both proved to be important influences upon the learning gains.

A critical reanalysis of the initial evaluation data was carried out by Cook et al. (1975) as a kind of secondary evaluation. Cook started from different premises, looked at the data from a fresh point of view, and concluded that encouragement to view was the most critical factor in the Sesame Street outcomes. Frequent visits to the home and incentives for the family played up the importance of paying attention to Sesame Street, a factor missing in most American homes, particularly the disadvantaged ones. He also noted that Sesame Street widened the gap between middle-class achievers and the disadvantaged lower classes, raising a policy dilemma for those committed to narrowing this gap. An interesting rebuttal by Ball and Bogatz is given in the last chapter of Cook's book, sharpening the debate between the two groups of evaluators.

An admitted weakness of the Sesame Street studies was the lack of complete experimental control over the viewing conditions which resulted in a number of debatable interpretations. In an open, democratic society such rigid control of viewers and nonviewers under field conditions in the child's home is almost impossible to achieve. Once Sesame Street has been widely broadcast and publicized, the conduct of such experiments is immeasurably more difficult. But one such experiment was carried out under carefully controlled conditions with a Spanish version, Plaza Sesamo, in Mexico.

Plaza Sesamo Experiments in Mexico

Diaz-Guerrero and his colleagues in Mexico participated in the formative studies that were undertaken during the script writing and recording of the Plaza Sesamo series. In addition to the cognitive goals of Sesame Street, stress was placed upon personal accomplishment and self-esteem, the outward expression of one's emotions, and community cooperation. The entertainment style and motifs were altered to reflect more accurately the life and attitudes of Latin Americans. Before Plaza Sesamo was broadcast, an evaluation study was designed with children in three different lower class daycare centers randomly assigned to experimental and control groups (Diaz-Guerrero and Holtzman 1974). A total of 221 3-, 4-, and 5-year-olds were equally divided by age and sex. The experimental groups watched Plaza Sesamo for 50-minute periods, 5 days a week, until all 130 programs had been viewed. The control groups watched cartoons and other noneducational television programs on a different broadcast channel in a separate room. Since Plaza Sesamo was new, none of the children had seen it before the experiment. Efforts to prevent the control children from inadvertently viewing the program were completely successful for the duration of the 6-month experiment.

Spanish adaptations of the Sesame Street test battery plus several new tests were given to each child at three points in time: (1) pretest, just prior to the experiment; (2) during treatment, 7 weeks after beginning the experiment; and (3) posttest, immediately after the end of the experiment. Periodic ratings of attention and records of absences were kept for each child. Dropouts were relatively few and occurred equally in both groups. The definitive results were as follows:

- . Regardless of age group, the children who regularly watched Plaza Sesamo did significantly better on at least four of the nine cognitive learning tests than did the children who only watched cartoons.
- . The greatest increases for Plaza Sesamo viewers occurred on the three tests most closely related to the stated goals of the television program--General Knowledge, Numbers, and Letters and Words.
- . Oral comprehension, a test unrelated to Plaza Sesamo which consisted of familiar objects, animals, etc., about which the examiner asks simple questions, also revealed significantly greater gains for Plaza Sesamo viewers in all three age groups.
- . The older preschoolers showed the greatest gains from watching Plaza Sesamo.
- . Although the most rapid gains occurred in the first 7 weeks of viewing, the gap between the experimental and control groups continued to grow throughout the 6 months of viewing.
- . Degree of attention to Plaza Sesamo correlated positively with amount of gain for the experimental children.
- . Experimental children with many absences did less well than those who attended regularly.

These results clearly indicate that significant gains are made in cognitive and perceptual abilities by Mexican preschool children who faithfully watched Plaza Sesamo for 6 months. Particularly surprising is the fact that even measures unrelated to the main thrust of the curriculum showed significant improvement for Plaza Sesamo viewers, as contrasted to children who watched only cartoons. These unequivocal results were sufficiently promising to justify a large-scale summative evaluation under field conditions to see how well these positive findings concerning Plaza Sesamo hold up when viewing conditions are not so rigorously controlled. After extensive demographic and audience profile studies, the INCCAPAC research staff selected 12 urban daycare centers and three rural villages where experimental and control groups were established

by randomly assigning children to groups that watched Plaza Sesamo and other groups that watched cartoons. Since nearly all the city children had seen Plaza Sesamo at least once (the program had been broadcast for 2 years prior to the beginning of the second experiment), control groups consisted of children contaminated by uncertain amounts of prior viewing. Fortunately, Plaza Sesamo had been discontinued 6 months prior to the beginning of this second experiment, and the new version of Plaza Sesamo had not yet gone on the air. In any event, random assignment to experimental and control groups equalized prior exposure.

Pretest data were obtained on 1,113 cases of 4- and 5-year-old lower class children in the rural and urban settings. The experiment ran for 1 year. In phase 1, one-half of the children viewed Plaza Sesamo, while the other half watched cartoons. In phase 2 immediately thereafter, about one-half of the original experimental group watched a new version of Plaza Sesamo, while the other part of the experimental group looked at cartoons. The original control group was divided in a similar manner. Thus, by the end of the 12-month experiment, four different treatment groups, ranging from one group that saw Plaza Sesamo for 12 months to one control group that saw nothing but cartoons, had been studied. The 16 tests making up the individual battery were administered at three points in the experiment: (1) pretest; (2) posttest 1, between Phase 1 and Phase 2; and (3) posttest 2, at the end of the experiment.

Unlike the initial experiment, three problems were encountered which could be only partially overcome, resulting in some compromise of the original design. First, one-third of the children dropped out of the study in the first 6 months. Fortunately, this extensive attrition occurred equally in both experimental and control groups, but it tended to make the resulting samples more homogeneous. Second, some children in both experimental and control groups saw Plaza Sesamo at home for several weeks before the experiment began. And third, some minor additional contamination of control cases may also have occurred by an unexpected recycling of Plaza Sesamo during the Christmas holidays and by commercial exploitation of Plaza Sesamo characters in the marketplace. For these reasons, special analyses were carried out on subsamples that had been purified by elimination of all children who could recognize the common Plaza Sesamo characters.

Regardless of analysis or kind of child studied, the results of this major field experiment were largely negative. Only the urban lower-class 4-year-olds showed slightly higher learning scores after viewing Plaza Sesamo than did their control counterparts. All the other groups of children, both urban and rural, failed to show any significant differences between Plaza Sesamo viewers and cartoon viewers. In a detailed analysis of possible reasons for these results, Diaz-Guerreto et al. (1976) could find no clear explanation for the marked difference in experimental outcomes of the more rigorously controlled first study and the later, much larger field experiment. As they point out, only one important difference still remains between the two experiments that may explain the conflicting results.

In the first Plaza Sesamo experiment, small samples of experimental children were selected randomly each day and were separated from the other children in a special room where two assistants recorded their attention for every segment of the program. This side investigation may well have had an important reinforcement effect upon the children in the experimental groups. Although a separate analysis of initial scores and amount of gain for these daycare centers revealed no major effects, one cannot be too sure. In the earlier study, more adults attending to children were present at more times, creating a subtly different atmosphere in the first experiment than in the second. In many respects, this atmosphere is not unlike the encouragement-to-view factor used by Cook and Conner (1976) in their primary reinterpretation of the positive results obtained by both Ball and Bogatz in the earlier Sesame Street evaluations.

Both the Sesame Street and Plaza Sesamo studies strongly suggest that viewing conditions are highly important, if one is interested in having a major positive impact upon the child's cognitive and perceptual development. Some adult encouragement and the use of other incentives which communicate to the child that the program is important and that they should view it regularly may be essential, especially for lower class children. A "tertiary" evaluation by Liebert (1976) of Cook's book as well as the earlier Sesame Street and Plaza Sesamo evaluations reached essentially the same conclusions as Cook et al. concerning the limited gains and the extent to which even these are caused by factors other than high viewing.

These critical studies of Sesame Street and Plaza Sesamo have had little or no impact upon the spread of Sesame Street around the world in the past several years. It is easy to understand why, when one considers the alternative of not showing Sesame Street or programs like it. The appealing entertainment format, the program's educational content, and the high quality of production are an irresistible combination for anyone in search of a low-cost method for reaching millions of preschool children.

Television and Young Children in West Germany

A recent survey by Pawlik (1977) uncovered only a few research projects dealing with the impact of television upon child development. One of the more extensive projects is the followup study by Kob and his colleagues on the impact of the German Sesame Street, Sesamstrasse. Working out of the Hans Bredow Institute for Radio and Television at the University of Hamburg, Kob and Berghaus (1977) carried out a series of studies ranging from content analysis of program to controlled observations of the reactions of children

as they watched Sesamstrasse. The studies also included interviews with parents and teachers, as well as psychological testing of the social and cognitive capacities of viewers and control groups. In their adaptation of Sesame Street, the producers of Sesamstrasse placed a heavier emphasis upon social learning and avoided the extreme "magazine form" of very short spots in Sesame Street. These brief flashes were initially thought to irritate and distract children rather than to heighten their interest in the program. After several seasons of Sesamstrasse and evaluative studies, however, the German producers came around to agreeing completely with Children's Television Workshop in believing that the magazine format is superior for young children with short attention spans.

The Germans also found that experimental children who viewed Sesamstrasse improved significantly more than control children, as far as the cognitive aims of the program were concerned, thereby substantiating what had already been discovered in the Sesame Street and Plaza Sesamo evaluations. Middle-class children succeeded more in learning from Sesamstrasse than did those from lower social classes, although even the latter showed significant gains. One surprise finding was that heightening the child's awareness of minority groups did not improve their behavior with respect to minority persons, a finding opposite to the original goal of the producers. All of the German results indicated the most positive effects for viewing in families where adults could participate, a finding similar to many of the studies in North America, Mexico, and elsewhere.

One of the specific goals of Sesamstrasse was the development of sex-role understanding and role flexibility, and the reduction of sex-specific role fixations. The spots of American origin were compared with similar short presentations of German origin with respect to the presence of male or female actors in the program. Content analysis of over 12,000 interactions revealed that 82 percent of the American short spots had male actors in roles, while only 18 percent could be identified as female. While this male dominance was reduced to 68 percent in the German spots, it was still very clear that marked sex-role differences in which males were more aggressive, females more submissive, males more provocative, females more cooperative, and other such stereotyped traits prevailed. The traditional conformity patterns of sex role had not been altered in spite of stated attempts to do so in the initial productions.

Another center for research in West Germany is the Munich International Central Institute for Educational Television. Recent research by Sturm and collaborators has dealt with the effects of television on emotional responses in teenagers and adults. Typical of their approach is a study carried out with 15-year-old children who first viewed a 20-minute feature film dealing with the problems and difficulties of young people and then rated their impressions using a modification of the scientific differential. The stability of ratings dealing with power, excitement, and unpleasantness was studied over time, revealing a fairly high degree of stability for such emotional impressions.

Children's Television in Japan

One of the most advanced, technology-oriented nations in the world, Japan, has taken a special interest in television programs for young children since the initial success of Sesame Street. In addition to broadcasting the English version of Sesame Street which has proven particularly useful for adolescents and adults who wish to improve their English, the five major television networks have produced several other programs. Currently, 14 programs for preschool children are broadcast daily. Japan Broadcasting Corporation (NHK), the only public broadcasting system in Japan, presents programs for preschool children 530 minutes per week. The other networks have programs intended mainly for individual children who are at home, while the target audience for the NHK programs is primarily children on a collective basis at kindergartens or nurseries.

Two of the programs over commercial stations, Open Pon-ki-ki and Curriculum Machine, are similar to Sesame Street in their general goals, although the format is quite different. The most popular Open Pon-ki-ki has been broadcast continuously since April 1973. Emphasis is upon the cultivation of intellectual fluency, curiosity, and ability to process information. Evaluation studies have been conducted each year and have generally involved a comparison of cognitive gains between frequent and infrequent viewers over a 3-month period (Fujinaga and Azuma 1977). In one study, children observing Pon-ki-ki were compared with those who primarily observed Curriculum Machine. The latter program typically used highly structured and direct approaches to instruction, often involving a direct recitation activated by rhymes, gags, and animations. Pon-ki-ki stresses more the development of convergent thinking and is less direct in its approach. Although topics shift frequently, they are designed to converge on one concept or theme from many different angles in a given program. An individually administered test battery given to 34 children who regularly watched both programs, 52 children who only watched Pon-ki-ki, 35 children who only watched Curriculum Machine, and another 62 children who watched neither, sheds some light upon the two approaches. Fujinaga and Azuma report that both programs accelerated the growth of general cognitive skills when watched everyday. Pon-ki-ki seems to be particularly effective in improving mental abilities related to the solution of block design problems. The indirect approach of Pon-ki-ki raises questions and often gives figurative hints but rarely provides a direct answer. This stimulus enrichment approach with shifting topics converging on one concept seemed to be particularly useful in stimulating mental abilities of a convergent type dealing with figural relations.

Unlike in the United States, preschool viewing of television is much more carefully controlled by concerned adults. An older member of the family, the mother, or a teacher, is almost always present and helps to encourage the child's participation in the program. Many of the educational programs for preschool children involve common artistic and creative game-like activities, such as rubbing a piece of paper with crayon to make decorative patterns of things hidden under it or matching pictures by folding paper and rubbing it after first painting a simple object on one side of the paper.

Some of the differences between Japanese and American television for preschool children are worth noting. In addition to more parental involvement (or at least adult involvement) at the time of watching television, Japanese children tend to begin watching television at an earlier age and the amount of viewing per week for preschool children rises more rapidly, according to comparative studies by Fujinaga and Azuma. Japanese society is much more homogeneous than American, making it easier to program for the broad middle classes. The high density of population over a small geographic region and the combination of either strong family involvement or major institutional programs in nurseries or kindergartens are also more conducive to television as a medium of socialization and instruction.

A survey conducted by NHK in 1976 revealed that nearly half of the nurseries and kindergartens in Japan (22,000 institutions) incorporate television viewing as a regular part of their daily activities. A large-scale survey by the NHK Radio and Television Culture Research Institute in 1968 (Sakamoto and Akiyama 1977) revealed that virtually all 4- and 5-year-olds view television regularly and have established favorite programs. While most mothers recognize the value of television for acquiring knowledge and teaching cognitive skills to the child, few parents believe that television has desirable effects on language usage, emotions, or general behavior and conduct.

Japanese educators have made special attempts to integrate preschool television into the activities at home or in the nursery school and kindergarten so that the children are not simply passive viewers of the screen. Harada (1973) studied 5-year-olds who watched a series of variety shows for children every week. Before watching a given show, the children were briefed on what was going to happen. After the show, the children acted out under adult guidance the ideas they had obtained from the program. Then they saw a repeat of the show later in the week, at which time they were led by the teacher to think about the implications of the pictures on the screen and to follow the story. Harada claims that the children learned to elaborate on their play and develop a strong interest in words and numbers as a result of this approach. In a later study, Harada (1975)

encouraged both mothers and children to view the same program, one in the kindergarten and the other in the home. She encouraged mother and child to talk about the program afterward and found that children improved their ability in speaking and that parents came to have a better understanding of their children's thinking and behavior as a result of this cooperative effort. Similar experiments by Sato (1972), using a series of puppet-show programs for 3-year-olds, involved teacher and children in concurrent related activities, such as singing along with the music. Sato observed that when used in this way, television promoted greater sociability, consideration for others, and restraint of one's emotions.

Most of the evaluation studies concerning the impact of television upon young children in Japan are concerned with how the teacher in the kindergarten or nursery can integrate television into other daily activities. Most of the research indicates that active involvement by the teacher is necessary for program effectiveness. Very little work has been done in Japan concerning the direct evaluation of child behavior in experimental situations. Most of the studies deal with viewing behavior, ratings by teachers and parents, and descriptions of new ways of involving television for early education of the child.

Children's Television in Brazil

With the exception of Vila Sesamo, educational television in Brazil is aimed more at school children and adults with an emphasis placed upon instructional goals. A recent review by Netto and Angelini (1977) traces the development of television in Brazil and its impact on children as well as educational practices. Brazil is a land of extremes. Sao Paulo is saturated with television--95 percent of its families own television sets. The more rural and undeveloped states in the north of Brazil have little or no television because of vast difficulties in transmitting over wide expanses of relatively unpopulated territory. Until recently, nearly all of the research and scholarly work dealing with television has focused upon the more advanced urban societies of industrialized Brazil. While studies of the effect of mass media upon children go back over 50 years in Brazil, little work deals with specific behavior or controlled experimental research. The most common form of research in Brazil, as elsewhere, continues to be audience survey and viewer profiles of the type frequently done for commercial television.

In spite of the claims against television made by parents, teachers, and others who are concerned about exposure to violence and other objectionable behavior, there are very few Brazilian studies. As recently as July 1977,

the first commission of scientists and media specialists was appointed by the Ministry of Communication to study the influence of television on Brazilian children and society in general.

Some formative research was done as part of the production work for Vila Sesamo, the Portuguese version of Sesame Street produced in Brazil. Vila Sesamo was co-produced with Brazilian characters and a great deal of new script and production. Psychologists and educators participated in the planning for Vila Sesamo and undertook the formative research during the development of the program. It was impossible to obtain sufficient cooperation from private and government agencies for a systematic study of Vila Sesamo when used with disadvantaged urban children. Consequently, the series was viewed mainly by children of middle and upper socioeconomic status. A new project has been underway involving summative evaluation of deprived children in Brazilia, a project entitled "Projecto Garibaldi." The results of this study are not yet ready for publication.

The vigorous growth of television in Brazil presents a pattern typical of many industrialized societies in which the emphasis has been upon the launching of television as a major commercial enterprise for entertainment and public information. Only in the past several years has there been much attention given to the urgent need for systematic study of the impact of television upon young children. The popularity of Vila Sesamo has dramatized for the entire nation the potential value of television as well as the need to learn more about it as it affects children. There is every reason to expect a flourishing of important research in this area during the next 5 years. At the moment, however, there is little that can be learned from examining past studies in Brazil that applies to the American situation.

Project SITE in India

One of the most interesting national experiments involving educational television is the Satellite Instructional Television Experiment (SITE) that took place in India for 1 year beginning August 1975. The loan of a NASA satellite to India made it possible to provide television by relatively simple antennas designed to pick up the single transmitting channel from the overhead satellite. A total of 2,400 villages in six states of India were provided with direct reception by the satellite. About 400 of these villages had television sets placed in a public building where hundreds of individuals could watch the programs at one time. In many cases the entire community would fill the village square and surrounding trees, staring at the strange device placed in the window of the community center with the screen turned outward.

The instructional objectives for SITE transmission included the development of better family planning practices, children's education, improved health, and improved agricultural practices. Broadcast for 4 hours every day--2½ hours in the evening and 1½ hours in the morning--over 1,200 hours of programing were developed especially for SITE. The morning programs were exclusively for children between the ages of 5 and 12. Four different languages were used for different regions of the country. In every instance, the needs and problems of the isolated, relatively primitive villages were foremost in the minds of the producers.

Of special interest is the extensive research undertaken to evaluate the effectiveness of the SITE program. In a detailed description of Project SITE, Aghi (1977) summarized the formative evaluation, audience profile studies, and impact studies that were undertaken during the short period of the experiment. The Bombay SITE studio specialized in formative research during the production of programs, particularly in elementary science education. It was soon discovered that all rural children, regardless of the region of the country in which they lived, liked similar programs. An interesting format with an element of familiarity worked best with all rural children. They seemed to respond well to a lively presenter who demonstrated a high degree of empathy with children, regardless of the sex or age of the person. None of the children appreciated or understood extensive use of graphics and abstract symbols. By contrast, they all loved music, concrete demonstrations, and simple experiments in which the viewer had a feeling of personal involvement.

Scores of social scientists and research assistants participated in this huge experiment. Only preliminary analyses have been completed on the extensive data collected, and no results have been published as yet. Since television was being provided for millions of people for the first time in thousands of villages, most of the evaluation efforts focused upon the formative aspects of the project rather than evaluation of the outcome of viewing upon the individuals concerned. Pilot programs early in the experiment provided a rough set of guidelines for developing program strategies and preparing the kinds of visual stimuli that would be best understood by the villagers. Data dealing with audience reaction were collected in 27 villages on a daily basis and were then sent to a central analysis facility in Ahmedabad where they were analyzed immediately and forwarded to the different production groups working in various parts of the country. The feedback researchers met periodically with producers to analyze and discuss their findings.

Among the initial findings were the following:

- (1) Audience size depended upon village structure and characteristics. Many came to watch television because it was new. Actual numbers viewing a single set on display in the center of the village might vary from 40 to 500.

- (2) The broadcast of news was the least appealing, especially to non-Hindi states.
- (3) The seating arrangements rapidly changed until it was common practice for complete mingling of high- and low-caste villagers, as well as male and female viewers--a socialization that is somewhat surprising in view of the rigid segregation that takes place in most village activities.
- (4) Children proved to be the most consistent and faithful viewers of television in every situation studied.
- (5) Programs with useful, practical information were consistently more favored by viewers than simple entertainment, singing, or dancing.
- (6) Children were frequently observed doing things that they saw on television: Clearly a great deal of learning was taking place even though it was not systematically measured.

The SITE broadcast lasted for only a few months before it was abruptly terminated by assignment of the NASA satellite to other higher priority activities. Some ground-based broadcasting of television continued in a selected number of villages, and research evaluating the content of programs, the effect of teacher training combined with television, and the impact of science programs on children continued. A domestic satellite is being built by the Indian Government and should be ready within 2 years for launching into orbit so that the majority of India can be blanketed by television broadcast from the satellite. Small studies with young children in Bombay at the main headquarters for the SITE project have been expanded into other parts of India, resulting in some preliminary findings that will be useful when children's television programs are greatly expanded throughout the country in 1980. The preliminary results to date indicate that programs which appeal to children in one culture are also appealing to children in other cultures of India, particularly in the rural areas. The children most enjoyed demonstrations and experiments in which they were involved by a lively presenter with a lot of empathy for children. Difficult or new words, long and complicated messages, heavy use of graphics or abstract symbols quickly resulted in loss of attention and interest on the part of most children.

Results have been reported for two impact studies on children's television in India that are of some interest. Completed by the National Center of Educational Research and Training, one study showed very little difference in school performance between experimental and control schools where children were watching SITE programs. Other effects apparently related

to SITE television were very revealing, however. Children exposed to these television programs were more likely to borrow books and seek information elsewhere. In addition, they tended to think more scientifically and logically than did the children who were not exposed to television. Their language skills were also more developed than those of the comparison children. And finally, there was evidence that the television classrooms stimulated both teachers and children to engage in discovery learning rather than purely rote learning.

The second completed study in India on educational television for children dealt with the impact of science education programs on children in one Hindi-speaking sample, Rajasthan. The experimental group viewing television scored significantly higher in science information, although there were no differences in the way in which information was applied in solving specific problems. No differences were noted between experimental viewers and control nonviewers with respect to social, emotional, or cultural characteristics of the children.

The Indian experience with Project SITE may be so distant from the typical American situation that it is hard to generalize from one to the other; nevertheless, it is impressive to note how large numbers of severely disadvantaged, generally illiterate families and children profited from a particular kind of television broadcast reaching into the remote rural areas of India. Since all of the television broadcasts through Project SITE were controlled by the educational programers, and because the experiment has been underway for only a few months, no adverse social or emotional outcomes were observed. In most villages, only one television set was used as a display device for the entire village during the several hours in the morning and evening that broadcasting occurred. Studies dealing with the long-range impact of television viewing upon Indian children are being designed for implementation when Project SITE is resumed in 1980.

Influence of Children's Educational Television Upon Social Behavior and Personality

Most programs developed especially for children are aimed at cognitive stimulation and the learning of new information rather than the development of prosocial behavior and other desirable personality characteristics. Sometimes a program such as Sesame Street, designed primarily for cognitive learning, also takes into account other desirable social traits and deliberately programs for them. Only rarely is a program developed that is aimed specifically at teaching prosocial behavior for improved intergroup attitudes. One such program is Mister Rogers' Neighborhood, a popular

television program that has been broadcast in Europe as well as the United States.

A recent study comparing Mister Rogers' Neighborhood and Sesame Street demonstrates convincingly the way in which program content related to actual interpersonal behavior of children who view television (Coates et al. 1976). First, a content analysis was made of sample programs totaling 10 hours that were drawn from Sesame Street. Two observers rated each program on the frequency of characters giving positive reinforcement and punishment to other characters for social or cognitive behavior. It was discovered that Sesame Street programs consisted mainly of characters who gave both positive reinforcement (740 instances) and negative reinforcement or punishment (213 instances) to other characters on the show. By contrast, content analysis of 10 hours of Mister Rogers' Neighborhood showed a total of 1,224 positive reinforcements and only 67 punishment episodes involving interpersonal behavior. The punishment category that was employed by Coates et al, was very similar to the category of aggression as used by Friedrich and Stein, (1973). The positive reinforcement category included verbal praise and affection or some kind of affectionate physical contact.

Next, an experiment was carried out by Coates et al. involving 32 preschool children in a nursery school who observed either Sesame Street for 15 minutes on each of 4 treatment days or Mister Rogers' Neighborhood for 15 minutes on each of the 4 treatment days. The particular selections of Sesame Street segments emphasized more punishment than positive reinforcement, while all of the selections from Mister Rogers' Neighborhood emphasized positive reinforcement. Observations were made of each child before, during, and after the 1 week of exposure to each of the programs. The children's social contacts with other children and with adults were also measured.

Comparison of the children who watched Sesame Street with those who watched Mister Rogers' Neighborhood revealed that the quality of interpersonal behavior viewed on the screen influenced the quality of interaction among the children during the later free-play period. For the children who were generally low during the baseline measure in their giving of positive reinforcement and punishment, Sesame Street significantly increased both of these kinds of social behavior. For the children who were already fairly high in the giving of positive reinforcement and punishment to others, Sesame Street had no measurable effect. In the case of Mister Rogers' Neighborhood, the giving of positive reinforcement to other children significantly increased after exposure to the program. In addition, social contacts with other children and with adults in the preschool increased in frequency. These results are consistent with the earlier findings by Friedrich and Stein (1975) that 5-year-old children not only learn the prosocial content of programs such as Mister Rogers' Neighborhood, but they also reveal prosocial behavior in fantasy and real-life situations.

The results of these studies clearly indicate that prosocial behavior increases as a result of watching prosocial interactions on television. In a similar manner, punishment or aggression increases after watching

television in which such interpersonal activity dominates the scene.

Interpersonal attitudes, including racial attitudes, can also be influenced by the content of children's television. The Canadian Broadcasting Corporation developed a special series of Sesame Street programs in which children of different races and cultures were substituted for the original characters. A study by Gorn et al. (1976) demonstrated that preschool white children show a strong preference for playing with nonwhites, as opposed to whites, after being exposed to the Canadian-produced Sesame Street inserts containing nonwhite children. This positive transfer of attitude contrasted sharply with the preferences of a control group who were not exposed to the inserts. The sets of inserts were particularly effective because they were produced in an attractive manner and were presented to children within the popular format of Sesame Street.

Attitudes toward French-Canadians on the part of English-Canadian preschool children were also investigated by Gorn et al. It was found that children reacted favorably to the French-Canadian boy, even though he spoke an unfamiliar language. It is interesting to note that it did not matter whether Richard spoke French, since the children tended to pay more attention to what they saw than to what they heard. These short-term changes in attitudes are quite clear cut, at least in preschool children. Whether or not they generalize to other situations is unknown and requires further research for clarification.

Discussion and Recommendations

While considerable attention has been given to educational television for preschool children in recent years, research of an experimental or evaluative nature is still relatively uncommon. Most studies of children's television in countries other than the United States deal primarily with audience surveys and reactions to television, rather than measurement of the impact of television upon the actual behavior of young children. The international success of Sesame Street and, to a lesser extent, of Mister Rogers' Neighborhood has focused attention upon the importance of television as a powerful medium of education and socialization for preschool children. The extensive evaluative research on Sesame Street as part of its original development in the United States set a pace that is difficult for most other countries to achieve. Sesame Street provides a comprehensive model of evaluation that serves as a standard for others to strive for in attempts to determine the value of deliberate programing for preschool children.

A comprehensive evaluation study can be divided into seven major steps as follows:

- (1) Establishing goals and concepts. The objectives of the program must be explicitly stated in the form of practical goals that are socially significant to achieve. A major goal of the American Sesame Street, for example, was to improve the abilities of preschool children in four areas of school readiness. The goals for Project SITE in India were more modest in nature, namely, to impart elementary information on the village life, science, hygiene, and family living to children and adults in remote villages.
- (2) Developing program content. The production of a program is a creative process involving writers, actors, producers, and educators. In addition, formative evaluation during the early stages of curriculum development is crucial in achieving success. Such formative evaluation can range from content analysis, such as that undertaken by Coates et al. in their study comparing Sesame Street and Mister Rogers' Neighborhood, to small studies in which segments of the programs are viewed by children similar to those in the intended target audience for the completed program series. Rapid feedback is critical to success.
- (3) Defining and surveying the audience. The target audience is partially defined by an explicit statement of the program's goal. In addition, however, it is important to test the limits of the audience, since in many cases a program may be viewed by an audience different from that originally intended. Viewers of Sesame Street in America are primarily young children. Viewers of the Spanish version in Mexico may include older children, maids, and adults. Viewers of Sesame Street in Japan and Israel are adults and older children who wish to improve their English. Any evaluative research must define the intended population and construct an adequate sample for a research design in order to study the effectiveness of the program as it relates to the stated goal.
- (4) Measurement. Empirical measurement may range from content analysis of program segments to delayed outcome measures of impact upon viewers. It can vary from the simple counting of events or categories of behavior to extensive individual psychological testing of viewers before, during, and after exposure to the program. The kind and intensity of measurement depend upon the purposes of the evaluation, the technical resources available, and the amount of financial support budgeted for evaluation.
- (5) Implementing the research design. Designing a research project and carrying it out are very different tasks. As in any field research, evaluation of children's television involves a delicate balance between adherence to high standards of research design

and measurement (without undue rigidity) while maintaining a flexible, adaptive stance in anticipation of the necessity for some compromise with reality in order to complete the study. All kinds of unexpected events can occur as in the field study evaluating Plaza Sesamo in Mexico. A high degree of cooperation must also be elicited from governmental authorities, television producers, and the general public before the evaluation can be completed.

- (6) Data analysis. Both quantitative and qualitative aspects of the data collected in the evaluation research must be appropriately coded, studied for reliability, and analyzed statistically before any interpretation can be made.
- (7) Interpretations. The same set of data and analyses can be interpreted in different ways from different perspectives. The extensive controversy between the original evaluators of Sesame Street, Ball and Bogatz, and the secondary evaluators, Cook and his colleagues, is a good case in point.

Given the above seven steps as essential to any complete evaluation, it is small wonder that so few good evaluation studies have been completed. Most of the work done outside Europe and the United States tends to be descriptive and formative in nature. Only rarely are there studies of the actual impact of television upon young children. The reasons for this lack of strong evaluative research are several. First, only in certain countries does one find a sufficient number of highly competent behavioral scientists to conduct this type of research. While there may be competent behavioral scientists in some of the developing countries who could carry out such work, inevitably they are overburdened with many other responsibilities that prevent their concentration upon research. Second, the culture itself may not be conducive to this kind of research, even though resources are available. In Japan, for example, there is a real hesitancy to intrude upon the child, the family, and the school. Little actual impact measurement is undertaken, although the capability certainly exists. A third reason for lack of good evaluative studies is the simple fact that they tend to be rather costly for the benefits that are achieved. The thorough evaluation of Sesame Street in North America cost over \$1 million. The evaluation research in Project SITE for India focused mainly upon audience studies, feasibility studies, and formative research to improve the program development rather than to study systematically the impact of the programing upon behavior on the part of viewers. The cultural setting in Brazil, though conducive to some evaluation, emphasizes commercial television and private enterprise in television broadcasting. The systematic evaluation of Plaza Sesamo was made possible only because of a major grant from the Ford Foundation, an event unlikely to recur in other countries or indeed even in Mexico, for that matter. And finally, most evaluative research of a summative nature which examines impact upon children takes too long to complete in order to have a practical influence upon the program in question.

In spite of these reservations and difficulties in undertaking significant evaluative research of television impact upon children's behavior in countries outside of North America and Western Europe, there is considerable hope for the future. Most of the countries surveyed, among which the examples cited earlier are only illustrations, are very heavily committed to national development of television as a "public good." As these television developments accelerate in the next 5 years, one can expect the governments and both professional and political leaders to raise serious questions about the quality of the television programing and its positive or negative effect upon children. Indeed, this question is foremost in the minds of many public leaders in Brazil at this very moment. Once the question is raised as a serious national issue, it is only a small step further to acknowledge the importance of some kind of evaluative research using behavioral science methods. In those countries in which strong behavioral science activities and resources already exist, there is good reason to expect the development of scientifically sound evaluation research on this important topic. Unfortunately, the majority of developing countries do not have sufficient strength in the social and behavioral sciences to undertake such research.

What steps can be taken by behavioral scientists in the United States and more specifically by the National Institute of Mental Health, given the above considerations? The following recommendations are offered:

- (1) Major centers of television research in North America, Western Europe, and Japan already provide strong capability for undertaking comparative studies such as those that have been done in a preliminary manner on Sesame Street and Mister Rogers' Neighborhood. In particular, the research centers in the United Kingdom, Scandinavian countries, West Germany, and France already have competent psychologists, sociologists, and other behavioral scientists on their staffs where a great deal of research is already underway. Similar developments are rapidly taking shape in Japan. Within the next 2 years, considerable progress could be made in the development of comparative international studies among the developed countries if encouraged by American leadership. The Children's Television Workshop in New York is a good point of departure.
- (2) Comparative research in the developing countries where capability now exists for research on the impact of television upon young children, such as India, Israel, Brazil, and Mexico, should be drawn into cooperative projects as rapidly as possible. Most other countries look to the United States for leadership in this regard because of our vastly superior developments in technology, behavioral science research, and resources. Bilateral or multi-lateral cooperating efforts among the developing countries can be established now with a little leadership from American social scientists and government organizations or private foundations. Working with very different cultures from those of Western Europe

and North America has decided advantages in any comparative research. Indeed, certain kinds of experimental studies, such as those undertaken in the evaluation of Plaza Sesamo for Mexico several years ago, can no longer be conducted in western countries because audiences are so saturated with current television programming. The developing countries offer new opportunities both for more rigorous control of experimental variables under field conditions and for impact studies upon populations not yet exposed to television.

- (3) Short-term experimental studies under laboratory conditions can be undertaken in the United States with greater ease and greater likelihood of success than in most other countries, especially where American governmental sources of support are involved. Research dealing with aggression, prosocial behavior, intergroup attitudes, and other important outcome variables for children's television can be supported by existing resources and review groups under government and private foundation sponsorship. There does not appear to be any compelling reason for American governmental support of such laboratory research in other countries, except in that unusual circumstance where a genuine cross-cultural research design has been proposed that would shed important light upon cultural factors in television that could not be studied under laboratory conditions in the United States. Comparative studies of ethnic and social class groups within the United States are of greater and more immediate practical significance in policy formation for the American government or private television networks than would be similar studies elsewhere.
- (4) For countries around the world other than the few highly developed and developing nations where capability already exists, resources in the United States would best be applied toward the long-range development of behavioral science capability in foreign countries. Until such general capability has risen to a critical mass where talent and technology can be diverted from other high-priority needs to the study of television's impact upon young children, it is unlikely that scientifically significant research will be undertaken in these less developed countries. Improving the climate for behavioral science research and its acceptability for evaluating national programs that have policy implications in other countries is a noteworthy goal for American foreign policy as well.

The above survey only highlights a few of the most important and interesting evaluative studies dealing with the impact of television upon young children. This field of research is relatively new, even in the United States, and is almost unknown in most other countries. The work

that has been described in Japan, India, Brazil, Mexico, West Germany, and to some extent in Canada and the United States illustrates the kinds of research that have been completed recently and points to important new emphases that should be given high priority at the international level. The number of studies dealing specifically with social and personality development is disappointingly small outside of the United States and Western Europe. Quite understandably, most countries are more immediately concerned with feasibility studies, audience surveys, formative evaluation, and perhaps some beginning research on the impact of educational television upon cognitive learning and school achievement in young children.

An international project dealing with the impact of educational television upon young children is nearing completion under the joint sponsorship of UNESCO and the International Union of Psychological Science. Underway for 3 years, this project will culminate in a book published by UNESCO in 1981 dealing with many of the issues briefly presented above. It is hoped that this international effort will create wide interest in the very challenging and important research yet to be done throughout the world on educational television and its impact upon young children.

REFERENCES

- Aghi, M.B. "Impact of Science Education Programs on Children in Project SITE in India." Paper presented at Second International Symposium on the Impact of ETV Upon Child Development, Tokyo, September 21, 1977.
- Ball, S., and Bogatz, G.A. The First Year of Sesame Street: An Evaluation. Princeton: Educational Testing Service, 1970.
- Bogatz, G.A., and Ball, S. The Second Year of Sesame Street: A Continuing Evaluation, Vols. I-II. Princeton, N.J.: Educational Testing Service, 1971.
- Coates, B.; Pusser, H.E.; and Goodman, I. The influence of Sesame Street and Mister Rogers' Neighborhood on children's social behavior in the preschool. Child Development, 47:138-144, 1976.
- Cook, T.D.; Appleton, H.; Conner, R.F.; Shaffer, A.; Tamkin, G.; and Weber, S.J. Sesame Street Revisited. New York: Russell Sage Foundation, 1975.
- Cook, T.D., and Conner, R.F. The educational impact. Journal of Communication, 26:155-164, 1976.
- Diaz-Guerrero, R., and Holtzman, W.H. Learning by televised Plaza Sesamo in Mexico. Journal of Educational Psychology, 66:632-643, 1974.
- Diaz-Guerrero, R.; Reyes-Lagunes, I.; Witzke, D.B.; and Holtzman, W.H. Plaza Sesamo in Mexico: An evaluation. Journal of Communication, 26:145-154, 1976.
- Friedrich, L.F., and Stein, A.H. Aggressive and prosocial television programs and the natural behavior of preschool children. Monographs of the Society for Research in Child Development, 38(4): Serial No. 151, 1973.
- Friedrich, L.K., and Stein, A.H. Prosocial television and young children: The effects of verbal labeling and role playing on learning and behavior. Child Development, 46:27-38, 1975.
- Fujinaga, T., and Azuma, H. "Evaluation Studies of Open Ponkiki in Japan." Paper presented at Second International Symposium on the Impact of ETV Upon Child Development, Tokyo, September 21, 1977.
- Gorn, G.J.; Goldberg, M.E.; and Kanungo, R.N. The role of educational television is changing the intergroup attitudes of children. Child Development, 47:277-280, 1976.

- Harada, F. Planning of children's play after watching educational television. The Annual Report of Broadcasting Education, 10:85, 1973.
- Harada, F. Simultaneous viewing of children's program, children in the kindergarten and mothers at home. The Annual Report of Broadcasting Education, 12:6, 1975.
- Kob, J., and Berghaus, M. "Sesame Street in the Federal Republic of Germany." Paper presented at Second International Symposium on the Impact of ETV Upon Child Development, Tokyo, September 21, 1977.
- Liebert, R.M. Evaluating the educators. Journal of Communication, 26:165-171, 1976.
- Netto, S.P., and Angelini, A.L. "Impact of Television on Children and Education in Brazil." Paper presented at Second International Symposium on the Impact of ETV Upon Child Development, Tokyo, September 21, 1977.
- Palmer, E.L.; Chen, M.; and Lesser, G.S. Sesame Street: Patterns of international adaptation. Journal of Communication, 26:109-123, 1976.
- Pawlik, K. "Educational Television Research in the Federal Republic of Germany." Paper presented at Second International Symposium on the Impact of ETV Upon Child Development, Tokyo, September 21, 1977.
- Sakamoto, T., and Akiyama, T. "Present State of Evaluation Studies on the Impact of Educational Television upon Children in Japan." Paper presented at Second International Symposium on the Impact of ETV Upon Child Development, Tokyo, September 21, 1977.
- Salomon, G. Cognitive skill learning across cultures. Journal of Communication, 26:138-144, 1976.
- Sato, S. Three-year-old-children and educational television. The Annual Report of Broadcasting Education, 9:46, 1972.

Chapter 10. PUBLIC INFLUENCE AND TELEVISION PROGRAMING

Richard I. Feinbloom, M.D.

The media reform movement began in 1968, with the formation of Action for Children's Television (ACT), some 20 years after the introduction of television in this country. During the following 10 years, the movement has grown and concerns which it first expressed have been taken up by other groups. Today there are at least 65 organizations in this country with specific programs in media reform. These are listed in the Appendix. For some, such as ACT, media reform is the sole activity; for others, such as the American Medical Association, media reform is a minor, albeit important, concern.

The reform groups vary in size, method of operation, and orientation. For example, the National PTA (Parent Teacher's Association) Television Action Center is an activity of a major statewide organization with the capacity to reach millions of parents. It has focused primarily on the topic of violence on television. In contrast, the media activities of the National Gay Task Force are directed toward the generation of a positive public image of gay people, for media coverage of gay issues, and for equal employment rights in the media.

In addition to groups with identifiable programs, there are many other organizations which endorse aspects of the work of the reform groups and participate in the public arena on television issues relevant to their concerns and authority. For example, the American Academy of Pediatrics is both an endorser of ACT and a coplaintiff in ACT's 1977 petition to the Federal Trade Commission (FTC) for a ruling which would ban the advertising of candy on programs directed to children.

THEMES

Several dominant themes of the media reform groups have emerged:

Violence on Television. Televiolence is perhaps the best known and most important issue of the television consumer movement. Most of the research into the impact of television on children has focused on the question of the effects of violence and most of the public concern has been addressed to this issue.

Health Related Effects. Commercials for food products directed to children have drawn the greatest criticism. The major charge is that television fosters a nutritionally undesirable diet emphasizing candy, sugared cereals, and sweetened beverages which would be better left out of the child's food intake. The end results of this diet are obesity and tooth decay, two major public health problems. The sedentary habits implicit in television viewing may also contribute to the excess pounds on so many Americans.

Advertising for medicines on television, it is charged, promotes a biased view of the appropriate response to medical symptoms. Ads do not, for example, inform on the choices of response to a symptom such as headache. They exclusively urge the use of drugs. Several studies of the health-related content of programs and advertising have judged 70 percent of the information to be inaccurate, misleading, or both. Yet 70 percent of fifth- and sixth-graders in these studies were found to believe such messages. (Lewis and Lewis, 1974; Smith et al. 1972).

Stereotyping and Discrimination Offensive to Various Groups. Organizations of women, blacks, homosexuals, Hispanics, the elderly, and the handicapped have called for an increased representation of their groups in television presentations and within the media itself. They have also advocated a more humane, balanced, and sympathetic portrayal of characters depicting people drawn from these subgroups. For example, the Grey Panthers in their Media Watch program have established criteria for assessing stereotypes, distortions, and omissions regarding old people and have helped publicize the observation that persons 65 and over constitute only 3 percent of television characterizations, while the percentage of the population 65 and over is nearly four times that number, 11 percent. This skewing may be related to the shying away of commercial broadcasters from programs specifically directed to the elderly because of their presumed relatively weak purchasing power. The "Moral Majority," a condition of conservative religious groups, has singled out violence and "pornography" as threats to family life.

Commercialism in Children's Television. The charge is made, most forcefully by ACT, that commercial television has made mini-consumers of children and that children are unable to deal discriminatingly with the flood of advertising to which they are exposed. In a significant achievement, ACT obtained a ruling from the Federal Trade Commission (FTC) which has banned the advertising of vitamin pills on children's programs. While this decision was based largely on considerations of health, it can also be interpreted as an opening wedge in the effort to establish the principle that all advertising directed to children is inherently unfair and deceptive. This principle came into sharper focus in the arguments before the FTC and the Federal Communications Commission (FCC) in 1978 and 1979.

Discriminating Use of Television in the Home and School.

In addition to concern with improving, from their points of view, the content of television, many groups are engaged in what could be termed "consumer education in television use," which is related to, and yet different from, their reform activities. For example: Consumer Reports Films has produced The Six Billion \$\$\$ Sell (A Child's Guide to TV Commercials). The National PTA TV Action Center has prepared a curriculum on critical viewing skills for use in home and school. Prime Time School TV (PTS-TV) and the Teachers Guides to Television prepare study guides for parents, teachers, and children on current programs which use the program as a jumping-off point for learning. Thus in the PTS-TV curriculum unit "Television, Police, and the Law," crime dramas, even with their emphasis on violence, are analyzed from the point of view of accuracy of representation of the activities of law enforcement agencies: legality or illegality of the procedures depicted regarding the acquisition of evidence. use or nonuse of a search warrant, informing the suspect of his right to remain silent, etc. Such an exploration can lead logically to an analysis of the structure of the legal system right up to the Constitution itself. All of this educational effort is based ultimately upon children's existing motivation to watch current crime dramas.

The Media Action Research Center sponsors Television Awareness Training, an organized curriculum available in many localities on television viewing skills and issues.

ACT has sponsored the book A Family Guide to Children's Television by Evelyn Kaye (New York: Pantheon Books, 1977) and has created the poster Treat TV with TLC which suggests sound rules for home use, such as parents watching with their children, discussing and interpreting what is watched, planning what to watch, and insisting that the set be turned off when the agreed-upon program has ended. Similar information is contained in a tag designed for attachment to the television set.

Closely related to this theme of consumer education is the increasing involvement of children in the medium. Examples are the public television program Zoom, the news programs by and for children on commercial television, the production of programs by children in the CRP station in Washington, D.C., and the establishment of television courses within elementary schools and high schools in which children make their own shows.

ACTIVITIES OF MEDIA REFORM GROUPS

Educational. All of the groups have in common the raising of public awareness about issues and the dissemination of their points of view through publications, workshops, meetings, and other presentations. The Ambulatory Pediatrics Association has distributed a brochure on using television in the home, taken from the Child Health Encyclopedia (Delacorte, New York 1975), which member health professionals can reproduce for distribution to parents. ACT and the Committee on Children's Television maintains reference libraries and reading lists.

Monitoring of Programs and Feedback. A number of the groups systematically survey programs for issues reflecting their primary interest, publicize their findings, and communicate their reactions to local stations, networks, advertising agencies, and sponsors. The activities of the Grey Panthers regarding ageism have been mentioned as one example. The organization H.A.R.T. BEAT (Help America Reduce Televiolence) and the National PTA TV Action Center survey prime-time television for violence content. The National Citizens' Committee for Broadcasting does the same and includes a rating of networks and sponsors from the least to most violent. All of these groups supply members and the public with the results of their surveys, provide the names and addresses of people working in local stations, networks, sponsoring companies, and advertising agencies, and offer guidance on letter writing and direct contact.

Lobbying and Legal. Influencing the media through the regulatory mechanism is an important type of activity. The example of ACT's petitions to the FTC on vitamins and candy advertisements has been mentioned. In another kind of action in 1977, a license renewal year, the Committee on Children's Television organized "Countdown '77" and filed suits and objections with the FCC against the renewal of all Bay Area commercial television licenses. The reform groups also provide testimony before Senate and House committees concerned with television.

Building Bridges With the Industry. There is a growing number of examples of more cooperative encounters between the television community and concerned citizens. The annual ACT awards for quality programs are highly valued. The Project on Human Sexual Development has developed a format within which the television industry, the television creative community and persons knowledgeable in matters pertaining to human sexuality have worked together in a nonadversary relationship. Many important informal contacts between the television media and its critics are being forged.

Publicity. The media reform movement is a topic of great news interest to media, especially to the print medium. Press coverage has played a major role in disseminating the views of the reform groups. The critical attitude of the reformers toward the medium has had a ripple effect on the lay press, a notable example being the influential TV Guide.

ASSESSMENT OF THE IMPACT OF MEDIA REFORM GROUPS

The Public. There is some evidence of an increased awareness on the part of the public that television is an issue of concern and not simply a "given." For example, in 1977, the Louis Harris survey organization reported that 71 percent of Americans believed there is too much violence on television programs. Thus, the concern of a relatively small number of reformers appears to have become generalized to the community at large. The American Broadcasting Company (ABC), which has most reduced its violence in network programming, has also taken the overall lead in viewership. Nonetheless, programs with violent themes continue to draw high ratings, and violence continues to be one of the five top-rated themes in adult programming and the leading theme in cartoons. How these developments relate is not clear. It may be that the media reform movement, while increasingly visible, has not yet had an appreciable impact on mass viewing patterns which touch the raw nerve of the industry--the ratings.

The Television Industry. The industry is clearly sensitive to its critics, even to the point of expressing a sense of harassment with what is perceived as informal censorship bordering on "McCarthyism." One response has been a small reduction in the overall amount of violence. Another worrisome reaction is the suggestion of a trend to shy away from controversial material, violent or otherwise, in an effort to stave off public criticism.

There has been a noticeable increase, although still insufficient to satisfy all critics, in the involvement of minority groups, women, and the handicapped in the media. However, diversification of performers, important though it is, has not in itself dealt with the perhaps even more fundamental issue of portraying fleshed-out characters instead of the all too commonplace shallow, stereotyped ones. Although homosexuality, for example, has become a theme, it is usually presented in a voyeuristic way designed to shock, rather than as an aspect of whole people with feelings, conflicts, and,

above all, the vulnerabilities which affect all humans. There is still too little to learn from television about caring, intimacy, and honest deep communication.

In early 1978, one television network took out a full-page advertisement in leading newspapers to publicize its activities in improving children's television, which include afternoon and Saturday morning specials and nutrition information spots. (While such a move is a testimony to this network's increased awareness of the specialness of the child viewer, as long advocated by the reformers, it should be pointed out that this singing of their own praises in the public's eye will go unchallenged because their dissenters are in no position to afford comparable advertisements.)

In 1977, ABC, again acknowledging the special needs of children, published the excellent booklet Watching Television With Your Children by Eda T. LeShan. There has been a small shift toward increased "truth in advertising," e.g., adding the proviso when appropriate, "assembly (is) required" for toys. In general, it can be said that networks and local stations (e.g., the six specials "Catch a Rainbow" by WCVB, Channel 5, in Boston) are increasingly aware of responding to the special needs of children as advanced by the reform groups.

On the other hand, with regard to commercialism, the economic lifeline of the industry, there has been relatively little change as far as children are concerned. Although the advertising time on Saturday mornings has been reduced to 9½ minutes per hour (a 40 percent drop), the number of ads has remained essentially constant.

Advertisers and Sponsors. In response to the outcry against violence, a number of sponsors and advertising agencies have refused to buy advertising time to support violent programs. To what extent this trend will increase remains to be seen. It is an indication of the economic clout the reformers can mobilize. In a related and illustrative development, the American Association of Advertisers now distributes literature of the Grey Panthers to its members.

Teachers. There is evidence of increasing interest by school teachers in using television, both educational and commercial, as a point of departure in classroom teaching. Mention has been made of the activities of Prime-Time School Television. Another approach has been providing children in advance with the scripts of forthcoming television programs. This technique has proven to be a strong stimulus to the acquisition of reading skills in otherwise poorly motivated students. Television productions of

classics is said to be an incentive for students to read these literary and dramatic works too. In a related area, the American Library Association in 1975 sponsored a national Conference on TV and Children at its annual meeting.

The moratorium on the home viewing of violent programs declared by the Horace Mann School for Nursery Years in New York City, which claimed a resultant elimination of the aggressive play of its children, has set an example that has been emulated elsewhere.

In general, teachers appear to be taking television more seriously as a force in children's lives with which they must contend and which they can use to achieve educational objectives.

Health Professionals. During the past 3 years, a number of medical groups have picked up on the theme of condemning violence and joined the media reform movement. Editorials have appeared in the Journal of the American Medical Association, the New England Journal of Medicine, and Pediatrics. The American Medical Association (AMA) and the American Academy of Child Psychiatry have passed resolutions condemning violence in programing. The AMA had trained a cadre of physician spokesmen who were available to speak to community groups and other interested organizations to emphasize constructive means of using television programing as an outlet for parent-child discussions on modern social values. The AMA has provided financial support to several media reform groups.

As an example of local initiative, the Massachusetts Medical Society has also established an ongoing committee to deal with issues related to the media.

The Ambulatory Pediatrics Association (APA) has a Committee on Television and Children which educates its members who are medical and nursing educators about the many aspects of television which impinge on children's lives. The APA is encouraging the education of parents about television by nurses and doctors.

The Kaiser Permanente Medical Center in Portland, Oregon, has established a Children's Television Project which has developed one channel of closed-circuit television with carefully selected programs for children hospitalized at the center.

CONCLUSIONS AND RECOMMENDATIONS

The loosely knit media reform groups are playing an increasingly important and influential, although still minor, role in affecting what is programed, what is viewed, and how it is viewed. They have worked for the most part in the spirit of the First Amendment and have been as sensitive to the danger of government censorship as has the television industry itself. They have been successful in raising issues.

These groups can be considered as an expression of, and addition to, the broader consumer movement which may be characterized as an attempt to temper powerful commercial interests with human needs in fields such as wilderness preservation, pollution control, and product safety.

The relationship between the media and the reform groups has been primarily that of adversaries. There is as yet no institutional framework with which a more cooperative interaction can occur. One model for such cooperation might be the energy project at Georgetown University's Center for Strategic and International Studies which has brought industry and environmental groups together to develop an agreed upon national coal policy. This project is intended to prevent coal exploitation from falling victim to the same crippling political and environmental controversies which have affected the development of nuclear power. During the 1977 war of words between the networks and their critics on the issue of televiolence, similar crippling seemed to become a threat to the programing of all controversial material, violent or otherwise. There is no doubt that excessive public criticism could have a chilling effect on experimentation in programing and that some reform groups may have slipped into a position bordering on censorship.

Government could take the initiative in fostering the development of a suitable institutional structure for a more cooperative dialogue between industry and public. Even though there are perhaps some irreconcilable conflicts given the present funding structure of the industry, for example, declaring children "off limits" for all advertising, there would appear to be room for change which is still compatible with commercial success.

It is important to realize that the reformers depend largely on volunteer help and operate in many cases on shoestring budgets. They are pitted against a multibillion dollar industry with access to all of the trappings of power, including not least of all control

over the most influential medium of mass communication. To provide the reformers with a fair hearing, there are several relatively simple steps which government could take without, at the same time, corrupting their necessary independence:

1. Presentations of consumer groups (of all types) to regulatory agencies should be publicly financed, covering preparation costs and travel expenses. The FTC currently supports this principle; the FCC does not.
2. When there is an important issue affecting the public's well-being and health, and when private industry's case is well publicized, government should finance the presentation to the public of a scientifically valid alternative point of view, even though it may run counter to the interests of industry. For example, one of the large cereal manufacturers recently took out side-by-side full-page ads in papers throughout the country lauding the nutritional value of sugared cereals. A public opinion poll taken shortly thereafter pointed to a generally favorable view of the public toward such products and was used as an argument by industry against holding FTC hearings on the issue. There was simply no way that reform groups, armed with their own evidence, could comparably command the public's attention. Here government, properly advised, could honor the public's right to know by financing a presentation of the dissenting opinion.
3. The consumer groups often develop materials which should be of general public interest but are unable to finance their distribution. For example, ACT has developed a tag to be attached to television sets which provides parents with guidelines for television use in the home. Many parents would welcome such a tag. Here government could finance widespread distribution. At present, there is apparently no simple mechanism to do so, even though the idea might be an appealing one. One problem appears to be the necessity for issuing a "competitive bid" on such a project, even though there may be no competitors.

The beginning efforts of the reformers to promote "television literacy" deserves encouragement. The industry could help by developing television critics analogous to those in the print medium who traditionally deal with books, theater, film, and more recently, television itself. There could, for example, be a preview of programs for the week to come with a discussion of appropriateness for various audiences and opportunities for using the television experience as a take-off point for additional learning. There could be reviews of programs with critical analyses of quality of design, production, and acting. Children should be included in this process of criticism. Public television could logically serve such a function. There needs to be more discussion on television about

television, rarely itself the topic of the evening news. Government could use its influence on the media to encourage the television presentation of more television criticism.

Government's role in increasing the public's knowledge of how to use the media is as compelling as it is in other traditional fields, even though the definition of what to educate about may appear to be less clear. There is, for example, sufficient evidence for parents to be discouraged from exposing preschool children to violent programs. There is no way that the reform groups alone can afford to get this message out. Here the government should step in.

In addition to supporting traditional research into the effects of television viewing, there is a need for more government-supported research into decisionmaking by parents on the use of television in the home. Such research would become the basis for education of parents into more rational television use.

Closely related to the question of how to use television is the usually neglected question of what to do when not viewing television, a very reasonable question to ask when the significant time spent in viewing, if the statistics are to be believed, is comprehended. Both the industry and its critics seem tacitly agreed on the proposition that television watching is a given. The reform groups rarely raise their voices in protest over public television, even though there is little evidence that educational programs for preschool children have a lasting beneficial impact. Yet it is doubtful that any program, educational or otherwise, can substitute for experiences in which the child is an active participant. These educational programs are broadcast primarily because they are watched, an often overlooked fact, just as are their commercial counterparts.

There is a pressing need to encourage alternatives to television use lest this medium choke off other important human concerns. There are worrisome anti-social signs in this society, such as the fall-off in voter turnout at elections, the weakening of political parties, and a widespread cynical retreat into self-centeredness. The relationship of these trends to television is complex and beyond the scope of this discussion. The point made here is simply that television has become a powerful competitor for people's time, time which at least in part might be better spent from the point of view of society's needs. The alternatives need shoring up. While, for example, it is easy for the elderly to spend much of their waking hours watching television, there are many barriers to their participation in the social and political life of the community--financial, transportation, scarcity of organized daycare, etc. While watching televised sports programs is made effortless at almost any time of the day or night, convenient year-round indoor and outdoor recreational and fitness facilities are hard to come by. Families may be losing the capacity to entertain themselves and will need support in rediscovering the skills of doing things together. Thinking about issues related to television from this perspective should open up many exciting opportunities.

REFERENCES

- Lewis, C.W., and Lewis, M.A. The impact of television commercials on health-related beliefs and behaviors of children. Pediatrics, 53:431, 1974.
- Smith, F.A.; Trivax, G.; and Zuehlke, D.A. Health information during a week of television. New England Journal of Medicine, 286:516, 1972.

NATIONAL MEDIA REFORM GROUPS¹

Accuracy in Media
777 14th Street, N. W.
Washington, D. C. 20005

Action for Children's Television
46 Austin Street
Newtonville, Maine 02160

Ad Hoc Committee for Corporate
Responsibility
475 Riverside Drive
New York, N. Y. 10027

Alternate Media Center
New York University School
of the Arts
144 Bleecker Street
New York, N. Y. 10012

Ambulatory Pediatric Association
Office of Executive Secretary
4525 East San Francisco Street
Tucson, Arizona 85712

American Academy of Child
Psychiatry
1424 16th Street, N. W.
Suite 201A
Washington, D. C. 20036

American Association of
University Women
2401 Virginia Avenue, N. W.
Washington, D. C. 20037

American Medical Association
Department of Mental Health
535 North Dearborn Street
Chicago, Illinois 60610

American Women in Radio and Television
1321 Connecticut Avenue, N. W.
Washington, D. C. 20036

Aspen Institute Program on
Communication and Society
1785 Massachusetts Avenue, N. W.
Washington, D. C. 20036

Association of Independent Video
and Filmmakers, Inc.
99 Prince Street
New York, N. Y. 10012

The Bess Kaiser Hospital Children's
Television Project
c/o Herman Frankel, M.D.,
The Permanente Clinic
5055 North Greeley Avenue
Portland, Oregon 97217

Booker T. Washington Foundation
Cablecommunications Resource Center
1900 L Street, N. W.
Washington, D. C. 20036

Cable Arts Foundation
171 West 57th Street
New York, N.Y. 10019

¹ Acknowledgement for compiling of this list is made to the
Citizen's Media Directory (National Citizen's Committee for
Broadcasting, Pamela Graves, editor, 1977).

American Civil Liberties
Union
22 East 40th Street
New York, New York 10016

American Council for Better
Broadcasts
120 East Wilson Street
Madison, Wisconsin 53703

Center for Understanding Media
66 Fifth Avenue
New York, N. Y. 10011

Citizens Communications Center
1914 Sunderland Place, N. W.
Washington, D. C. 20036

Coalition for New Public Affairs
Programming
1800 Avenue of the Stars
Suite 900
Los Angeles, California 90067
and
1912 N Street, N. W.
Washington, D. C. 20036

Communications Resource Project
P. O. Box 13905
University of California -
Santa Barbara
Santa Barbara, California 93107

Consumer Federation of America
Communications Committee
1012 14th Street, N. W.
Washington, D. C. 20005

Council on Children, Media,
and Merchandising
1346 Connecticut Avenue, N. W.
Room 523
Washington, D. C. 20036

Gay and Women's Alliance for
Responsible Media
P. O. Box 48
GPO
Brooklyn, N. Y. 11202

Cable Television Information Cent.
2100 M Street, N. W.
Washington, D. C. 20037

Career Recruitment in Telecommunications
Industries
289 Park Avenue South
New York, N. Y. 10010

Media Access Project
1910 N Street, N. W.
Washington, D. C. 20036

Media Action Research Center
475 Riverside Drive
New York, N. Y. 10027

National Association for Better
Broadcasting
P. O. Box 43640
Los Angeles, California 90043

National Black Media Coalition
2027 Massachusetts Avenue, N. W.
Washington, D. C. 20036

National Citizens Committee for
Broadcasting
1028 Connecticut Avenue, N. W.
Suite 402
Washington, D. C. 20036

National Citizens Communications Lobby
1028 Connecticut Avenue, N. W.
Suite 402
Washington, D. C. 20036

National Correspondence Group
P. O. Box 1039
Palo Alto, California 94302

National Council of Churches
Communication Commission
475 Riverside Drive
New York, N. Y. 10027

National Federation of Community
Broadcasters
1716 21st Street, N. W.
Washington, D. C. 20009

Gray Panther Media Watch
1841 Broadway
Room 300
New York, N. Y. 10023

Help America Reduce Televiolence
P. O. Box 1701
South Bend, Indiana 46624

Independent Cinema Artists and
Producers
P. O. Box 775
Canal Street Station
New York, N. Y. 10013

National Federation of Local
Cable Programmers
224 Main Street
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